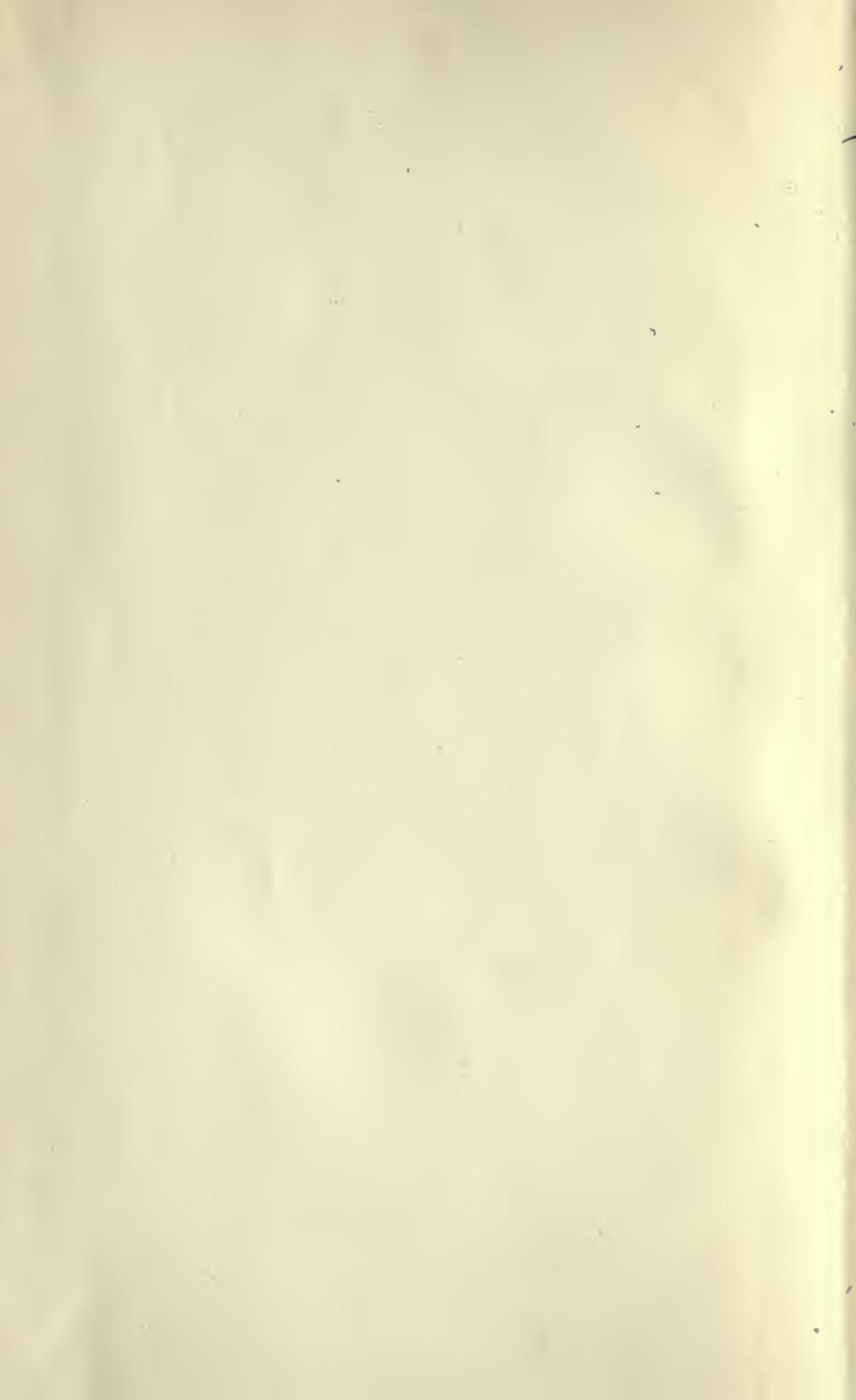




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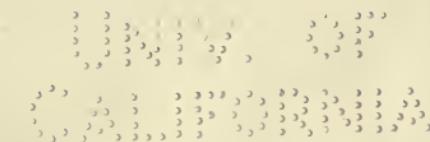
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Debaters' Handbook Series

SELECTED ARTICLES

ON

GOVERNMENT OWNERSHIP OF
TELEGRAPH AND TELEPHONE

COMPILED BY
KATHARINE B. JUDSON



THE H. W. WILSON COMPANY
WHITE PLAINS, N. Y. AND NEW YORK CITY
1914

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ANAGRAMMA

EXPLANATORY NOTE

This volume on the government ownership of the telegraph and telephone, like others of this series of Debaters' Handbooks, is primarily for students and debaters; yet libraries wishing a selected bibliography of reasonable length, as well as reprints of recent articles, will find it of use. As explained in the Introduction, statistics prior to 1907, and the arguments based upon them, are so out of date that they have been included to only a very slight extent.

The present service of the telegraph and telephone systems is fully described under the heading General Discussion, where articles discussing government ownership from all points of view are reprinted. Other articles arguing definitely for the affirmative or negative have been placed under those respective headings, and arranged in logical rather than alphabetical order. So far as possible, the two sides have been balanced as carefully as possible.

As is customary in this series, the selections in the reprints are given but in part, omissions not being indicated. Yet in no case has the omission included any sentence or paragraph which would misrepresent the point of view of the author, or invalidate the honesty of the quotation given.

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BRIEF

The question under discussion is whether government ownership and administration would be preferable to private ownership with the present degree of control.

GENERAL

The great need of the day is for rapid communication; because of

American energy and activity.

Vast extent of American territory.

Growth of international communication.

To meet this need, and avoid the delay of mail service, we have the

Telephone.

Telegraph.

Cable.

Wireless.

The two methods of electrical communication especially under consideration are the

Telephone.

Telegraph.

The importance of both is great in

The home.

The city dweller, needing supplies, service, or aid.

The isolated farmer, with the same needs.

Rapid communication between separated members of the same family.

Social life.

Saves time in making engagements.

Saves misunderstandings from broken engagements.

Makes social communication possible without leaving the home.

Community life.

Warnings of danger, of fire, or flood.

Prompt announcement of important events.

Business life.

Important transactions settled by telephone, where speed is of greatest importance.

Saves personal time, or messenger service, to business men.

National life.

Dissemination of general news, especially through newspapers.

Aids communication between State or Government officials, whether in the same building, or across the continent.

The importance of the cable and wireless are chiefly in International life.

Aids rapid communication between governments, in peace or in war.

Dissemination of international news, especially through the newspapers.

Protection and convenience to ocean travelers.

Governing the movements of naval or commercial vessels.

Intercommunication between islands, or islands and mainland.

*Periods of Development***Experiment.**

No experts.

No standards.

Crude apparatus.

Development.

Amateurs become engineers.

Improvements are invented.

Public becomes interested.

Expansion.

Recognition of the need of telephone and telegraph.

Telephone business becomes a commercial one.

Telephone business becomes scientifically technical.

Increasing public demand for service:

In cities.

On the farms.

Organization.

Rapid development in every direction.

Full appreciation by the public.

Business fully capitalized and organized.

Management in hands of highly trained experts, with efficient staffs.

Speed, accuracy, and national service the aim.

Telephone and telegraph systems may be divided into four classes:

Private ownership, with practically no control.

Private ownership, with government regulation.

Government ownership, and administration.

Government ownership, with private administration, under contract.

The United States now has a system of private ownership, with a large degree of control and regulation by

The State.

The federal Government.

AFFIRMATIVE

The services performed by the telephone and telegraph companies of the United States are of a public nature.

Public services must be monopolistic in order to be efficient. Otherwise such corporations

May become sufficiently strong to be independent of government.

May usurp the powers of government.

May tend to control legislative and regulative bodies, who, therefore, represent the corporations and not the people.

May become a social menace.

A private monopoly is always objectionable.

Private financiers encroach upon the government domain.

Public utilities too closely related to politics.

Legislative corruption possible through corporation bribes.

Stock heavily watered.

Charges under private monopoly inequitable.

Discrimination against isolated and unprofitable rural districts.

Permits of no competition.

Prices advance where competition ends.

Charges high to insure large profits.

The higher the price the greater the profits.

Public welfare disregarded.

All monopolies should be owned by the Government.

The people should be freed from money making public service corporations.

The Government should take over the telephone and telegraph service.

Available machinery is in the Post Office Department.

Efficient mail service a guarantee of good management, as shown by

Rapid collection and delivery of mail.

Financial ability, as shown by surplus, through efficient methods.

Vast extent of territory covered by Post Office service:

Profitable for telephone service.

Unprofitable for telephone and telegraph service.

Success of the parcels post, which has:

Reduced express rates.

Reduced mail rates on parcels, while increasing their weight.

Shown financial profit.

Reduction of operating costs can be accomplished through

Use of post office buildings, as exchanges and telegraph offices.

Avoidance of duplicate offices.

Joint use of postal employees.

Decrease of general expenses.

Combined use of telegraph and telephone on same wires.

Avoidance of duplication of expensive wiring.

Elimination of private profits.

Government service, furnished at cost, would make possible

Cheaper rates.

More general use among well-to-do.

Use among the poor.

Telephone and telegraph are part of the postal system in all other countries. This results in

Greater use of telegraph than in the United States.

More rapid telegraph service.

English telegraph service unrivalled.

Lower rates on telephone and telegraph than in United States.

Greater economy in management, by joint use of postal employees.

Greater amount of work done by each employee.

Response to a social demand, widespread and constant.

Freedom from competition, collision, or wasteful duplication.

American independent and rural companies wasteful and deficient.

New Zealand shows margin of profit.

Service requires a minimum of technical skill.

For specially skilled work, call in private aid.

Would free the Government from lobbying; thus

Preventing political corruption.

Avoiding political control.

Would permit rapid and disinterested use of newest inventions.

Cost of expensive changes and new inventions readily met by Government, because of

Control of vast sums of money.

Freedom from restrictions of private directors.

Freedom from necessity to show earnings.

Civil service an advantage to the Government.

Permits retention of tried employees.

Secures experienced and skilful service.

Avoids strikes.

Pays fair wages.

Wages uniform throughout the country.

Wages increased with tenure of service.

Demands only reasonable hours of work.

Gives better conditions of work.

Permits use of labor-saving devices.

Standardization of work gives check on efficiency.

Government employment free from abuses of private monopoly, which are

Favoritism to certain patrons.

Overlong hours of work.

Insanitary conditions.

Night work for boys.

Underpayment for skill and service demanded.

Capital more easily secured by Government.

No taxes.

Low interest.

No risks; therefore,

Expansion more easily made.

Increased use of lines already built.

Increased building in rural, sparsely settled districts; therefore,

Greater degree of social service.

Greater efficiency.

Unlimited capital in times of emergency.

At vote of Congress, vast sums ready for use in case of fire, flood, or danger.

The Government has the legal right to take control of all monopolies.

By law of 1866, Government has the right to take possession of the telegraph at any time.

The telephone, in England, has been decided to be a telegraph. Government should have control of all means of communication, electrical or otherwise.

This recommendation made by nearly every Postmaster General.

First encouragement given to Morse was by Government. First telegraph lines was a government line.

Inventor Morse recognized propriety of government ownership:

Offered telegraph for sale to Government.

Impossibility of United States joining in international telegraph tariff, because of private ownership of lines.

Present system a menace in case of war.

NEGATIVE

The services performed by the telephone and telegraph companies of the United States are of a public nature.

Public services must be largely monopolistic in order to be efficient. Such monopoly permits of

Higher degree of organization.

Development and employment of highly trained experts.

Greater efficiency, therefore
 Better service to the public.

Greater economy in management, therefore
 Lower rates to the public.

More complete control by state and interstate regulative bodies.

A government monopoly is much more objectionable than a private one.

Government monopoly must necessarily be restricted to such matters as involve the nation as a whole.

Government may not interfere with a state's rights.

Telephone service is largely within each state.

Government lacked initiative to develop telephone or telegraph.

Government lack of prevision is axiomatic.

Government monopoly is an interference with individual liberties. It will deaden

- Individual initiative.
- Individual enterprise.
- Individual responsibility.
- Individual accomplishment.

Private monopoly follows economic law: best service rendered where there is hope of reward.

Efficiency and ingenuity stimulated by reasonable profits.

The public profit by technical improvements.

No inventions by government employees to advance technical development of departments.

Public ownership throws utilities even more into politics.

Notorious "log-rolling" and "pork-barrel" methods in national waterways appropriations.

Inherent advantages in corporate management.

- No political control.
- Only sound commercial policy can meet its competition.

Government monopoly is a trust, subject to no regulation.

- No appeal from its decisions.

Privately owned monopoly greater benefit to public than same monopoly state owned, badly managed.

Easier to bring privately managed utility to high basis, through Government control and supervision, than to

raise state department to ordinary level of efficiency of business corporation.

Efficiency of business corporation is the ideal standard for Government departments.

Telephone and telegraph stock admittedly free of water.

Charges of privately owned monopoly equitable.

Must give satisfaction, or fail financially.

Must secure business under competitive conditions.

Government charges inequitable.

Charges less on small packets than on letters.

Charges less on newspapers than magazines.

Governmental indifference to inefficiency.

No satisfaction to complaints beyond formal acknowledgment.

Complaints against private monopoly heard and redressed, free of cost, by state or interstate regulating commissions.

Government discrimination in mail service, in rural districts.

No mail service to farms.

Rural mail left at nearest point on road.

No mail delivery in villages.

Such delivery recently installed and discontinued.

Rural telephone service rapidly expanding.

Farmers may build at will.

Competition open to independent lines.

Rural telephone, under government monopoly, closed to competition.

Farmers must await government lines.

Large profits prevented by law.

Dividends restricted.

Books always open to regulating commissions.

Uniform accounting demanded by law.

The Government should not take over the telephone and telegraph service.

It has no available machinery.

Machinery very simple.

Postmen collect, sort, and deliver mail.

Machinery actually supplied by the railroads.

Privately owned and efficient.

It has no available space.

Telephone plants need vast amount of space.

Post offices even now too small for own service.

If possessing space needed by extensive telephone service, are wasting money.

Buildings belong to the Treasury, not the Post Office.

Telephone and telegraph plants highly technical.

Necessarily built in centers suitable to technical work and efficiency.

Post Office buildings not in suitable locations.

Post Office buildings not constructed with view to use of scientific plant.

Would need expensive alterations, even if large enough.

Government mail service not efficient.

Collection and delivery are slow.

Compare with rapid English service.

Financial chaos.

Antiquated and confused methods of accounting.

Annual deficits.

Surpluses claimed shown to be fictitious: gained by

Decreased efficiency in service.

Delayed promotions.

Incomplete entries.

Questionable business methods of parcels post.

Needed no new machinery.

Merely added heavier parcels to those already carried.

No additional payment to railroads, rural carriers, or star-route contractors; yet

Immense increase in small packages.

No protection against freight being sent by mail.

No special parcels post service organized.

Heavy financial losses to smaller carriers.

Profits made up by losses to individuals.

Service could not be furnished at cost.

Must make a substantial profit, in order to

Extend new lines, especially in rural districts.

Build new plants.

- Install new improvements rapidly.
- For scrapping and depreciation.
- Government ownership abroad a serious loss to the people.
- Competition granted a source of confusion.
 - Many governmental restrictions.
 - Short terms of licences.
 - Confusion between rival companies.
 - No possibility of advance planning.
 - Heavy royalties demanded.
- Rates less satisfactory than American.
 - "Ordinary" rates cheaper, but
 - Cause great waste of time.
 - "Preferred" rates higher than in United States, but
 - Service no better.
- Purchasing power of money greater, therefore in general,
 - Rates no lower than American.
- Rates lower than cost.
 - Deficit made up by taxation.
 - Taxation falls upon user and non-user alike.
 - Such taxation most unjust to the poor.
- Latest appliances lacking.
- No advance planning for future needs.
- Inability to meet present needs.
- Untrained and inefficient employees.
- Slower service.
 - Innumerable complaints from people.
- Loss of taxation from private companies.
- Hours of service limited usually to daylight.
 - Higher rates for night service.
- Deadens private enterprise.
- Loss of efficiency.
 - Red tape; no individual responsibility.
- Loss of inventiveness.
 - American electrical inventions used abroad.
 - Electrical directors sent to study American methods.
- Unwillingness to scrap physically good machinery, to replace it with new inventions.
- Unwillingness to adopt labor saving methods.
- Extravagant administration and deficits.

Service needs a maximum of technical skill.

Demands experienced body of men, highly trained.

Needs picked body of highly trained assistants.

Would subject Government to lobbying: thus

Increasing political corruption.

Increasing political control.

Would occasion political danger through political machine.

Government employees of all classes would be numerous enough to form a political machine.

Could swing any close election.

Would form a self-seeking clique.

Would prevent rapid and disinterested use of newest inventions.

Great expense of scrapping machinery physically good: therefore

Political fear of charges of extravagance.

Possibility of replacing well-tested invention with poorer one.

Employees without technical training, therefore opposed to changes.

Civil service a disadvantage to efficient service.

Employees secure against dismissal or punishment.

Promotion dependent upon length of tenure, not of efficiency, therefore

Constant loss of efficient and progressive employees.

Retention of mediocre service only.

Does not avoid strikes.

Wages paid not relatively well apportioned.

Not varied with varying cost of living in different sections of the country.

Uniformity an injustice.

Systematic underpayment of Government to women.

No damages allowed by Government for injury in its service, except in specified work.

No pensions to employees.

No life insurance.

No welfare work.

Shorter hours and privileges paid for by taxation, therefore

By other workers, of all classes.

Wages based on political pressure.

Employees prevent use of labor saving devices
Would deprive them of their work.

Private ownership an advantage to employees.

Wages dependent upon efficiency.

Promotion rapid, if warranted.

Pensions paid to old employees.

Life insurance for employees provided for.

Damages collectible by employees for injuries in any class
of work.

Hours of work standard.

Wages based upon local conditions, therefore,

More just to the employee.

Employees favor use of labor-saving machinery.

Ingenuity an advantage to both employee and company.

Capital less easily secured by private monopoly.

Must borrow in the open market.

Must pay taxes to states.

Must pay interest.

Must face risks of all natures; therefore,

Must hold business confidence by efficiency.

Expand business systematically.

Capital more readily applied in emergencies.

No waiting for legislative action, in time of fire, flood, or
storm.

Capital borrowed by Government more easily; therefore,

Unnecessary sums borrowed.

Looser business methods of spending.

No definite plans for advance construction.

Increased national indebtedness.

Leads to higher rates of interest.

Occasions inefficiency.

The state singularly unfitted to conduct a business still in ex-
perimental stage.

Telegraphy and telephony, wired and wireless, still in their
infancy.

Great expense of paying for wired system if new wireless
immediately follows.

Government establishes arbitrary rulings from which there
is no appeal.

By government ownership, the state loses taxes now paid, and risks great deficits.

All deficits must be met by tax payer.

The people are indifferent to government ownership of the telegraph and telephone systems.

Has been brought into Congress seventeen times, with no action taken.

Ideal of government efficiency is the efficient private corporation.

The solution of the problem is government regulation and control of private ownership of telegraph and telephone.

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SELECTED ARTICLES ON GOVERNMENT OWNERSHIP OF TELEGRAPH AND TELEPHONE

INTRODUCTION

A vital point of interest on such a subject as the government ownership of telephone and telegraph systems is, in a broad sense, the relative newness of it. The original American law of 1866, it is true, provided for possible government ownership; and this question has been brought up at various times in the last forty years, usually by some Congressman and not as a popular movement, and has been dropped through general indifference. Within the last two or three years, however, the suggestion, made this time by the Post Office Department, has come more to the front and is receiving more general attention.

What contribute chiefly, however, to the newness of the question, are the changed facilities and the changed methods of the past decade. All means of electrical communication have, within that period, been revolutionized. Not only have telegraphy and telephony partially combined their operations, to the advantage of all concerned, but the extension of their lines has covered the country like a fisherman's net; and the wonderful advance in technical and mechanical methods, within the last five years, has added immensely to their value to the nation. In addition to this, both wireless telegraphy and wireless telephony have become quite generally known; and submarine telephony has been demonstrated as a possibility, though breaking, it is claimed, two laws of electricity heretofore considered fundamental.

Such changes, of course, within such a short time, put all arguments regarding the ownership of the telephone and telegraph upon quite a new basis. All statistics and comparisons prior to 1910, even, are so badly out of date that the majority

of the arguments based upon such facts and figures are not only antiquated, but incorrect and illogical. For this reason, very little material prior to 1907, except arguments based upon general economic laws, has been either cited in the bibliography, or reprinted in the text.

The law of 1866 which gave to the telegraph companies the free right to follow the national, or post, roads of the United States, to use stone, timber, and other needed construction material, without payment, from government lands—in other words, the free right of way granted by the American Government to the telegraph, is in distinct contrast to the absolute control taken of it in European countries. To the telephone, also, free scope was given by the national Government, though it had not the same right of way, especially in the cities; yet as a rule telephone wires have been strung upon telegraph poles throughout the country, and the companies were unrestricted in their development.

As a result of this freedom in developing methods and facilities, American inventiveness found a fascinating field of experimentation and practical utility in both telephone and telegraph, by which the whole nation has profited. And other nations have profited by the results of this ingenuity, since there was less opportunity for it in their own lands.

In Europe, on the other hand, with the constant menace of war, the telegraph was early taken possession of because of its fundamental importance as a military necessity. The service in many countries is good, with low rates which satisfy the people. The losses, where they occur, are made up, as are the postal deficits in our own country, from the general government funds.

The telephone, in nearly all other countries, was early decided to be legally a form of the telegraph, and therefore placed under government control. For many years there was no general demand for telephone service, or for a particularly efficient service where it existed, such as was demanded by the more active and rapidly-moving American people.

In America, however, with its vast expanse of territory, its widely scattered cities, with higher telegraph rates and slower delivery service, as well as slower mail service, the telephone has become one of the great public necessities. Its "inexorable seriousness" is what most impressed a recent English writer, who adds, "What strikes and frightens the backward European almost

as much as anything in the United States, is the efficiency and universality of the telephone."

So the problem stands as to whether that efficiency can be maintained, or even possibly increased, by government ownership; whether inventiveness will cease with the passing of private initiative; whether lower rates will mean a lower standard of service, or whether, indeed, rates are even now not really lower than European rates; whether government management will not mean possible deficits, to be made up by general taxation, and whether government ownership would mean political control and political inefficiency.

Or, whether, on the other hand, so important a commercial and social necessity as the telephone and telegraph should not be in the hands of the Government, rather than under private management; whether lower rates, through the elimination of private profits, may not mean the rapid extension of such a necessity into more humble homes, and into lonely, isolated country districts; whether government ownership might not be more effective than mere regulation or control; and whether the national Government would be any slower to adopt new inventions, or to encourage inventiveness, than private corporations have been.

The problem of private ownership without regulation is practically out of consideration. There is already a large degree of control and regulation, not only by the state, but by the federal Government.

The questions involved in this problem of government ownership are many and complex. They are economic, social, moral, commercial, scientific, military, touching every phase of American life, in the city and in the country, in business life and in the home, social life and political, as well as national and international.

Because the question is so complex, it has been especially important to present both sides fairly; yet this has been a task of peculiar difficulty because the initiative on this question has not come from popular opinion but from the Government itself, and the opposition comes from those best qualified by experience and training to understand the highly technical and scientific points involved, yet with private financial interests to consider. The American people, as a whole, have not yet expressed their opinion. Yet in spite of this difficulty, every effort has been made to present the question impartially.

GENERAL DISCUSSION

Literary Digest. 47: 663-4. October 18, 1913.

Government Control of the Wires.

No one seems startled nowadays by proposals for government ownership of telegraphs. Postmaster General Hitchcock advocated it officially as a member of the Taft administration. Followers of newspaper opinion are familiar with the arguments pro and con. But the rumors of the Wilson administration's intentions in this direction have provoked pointed suggestions from its opponents to the effect that, whatever merit the abstract proposition may have, the program as outlined in the dispatches has little, while the present is no time for its consideration.

It occurs to the *New York Times* (Ind.) that "if the wireless is as successful as its pioneers hope," the Government's acquirement of wire communications would be "backing the wrong horse." And with the same thought in mind, the *Wall Street Journal* exclaims: "Great idea to spend hundreds of millions of the public money expropriating telegraph wires which may be obsolete in ten years with the development of wireless." The reports from Washington say that the Government contemplates the eventual acquisition of the telegraphs through the control of long-distance telephones. As the *New York Press* sums up the chief points of the rumored program as given in the dispatches:

If the parcel post could be made a success as a Government operation, a Government telegraph service could be made an equal success.

If the telegraph corporations will not be reasonable in giving themselves over to the Government, then the Government, through control and operation of the telephone systems, can harry the telegraph companies into a meek surrender.

While it would be an enormous expense to buy the telegraph companies as a business proposition, if the American systems could be had at bargain rates—forced by competitive attacks of telephone systems controlled by the Government—then it would be as good a business for the Government to be in as the parcel post has proved to be.

It seems extremely doubtful to the *Savannah News* (Dem.) that there can be anything in the story "that the Government

aims to get the telegraph lines by such a method." And a number of editors and Washington correspondents note that this report has been left without official confirmation, so that they look upon it as at most "a feeler." The administration, concludes the Savannah paper,

May contemplate Government ownership of the lines, but if it does it will acquire them in a way that wouldn't be open to criticism.

The telegraph lines are owned by many thousands of people. It would be unjust to render their property worthless in order to get possession of it. When all the facts are known, it doubtless will appear that if the administration is planning Government ownership of the telegraph lines its plan includes the buying of the lines at a fair price.

Long arguments against the "delusive promises" of government ownership of the wires appear in the New York *Journal of Commerce* and *Times*, Brooklyn *Eagle* (Ind. Dem.), Philadelphia *Public Ledger* (Ind.), and Baltimore *American* (Rep.). The New York *Press* (Prog.) takes less extreme ground. It recognizes the strength of the arguments for public ownership of the means of communication by wire, saying :

If it were necessary, for example, to establish communications with or throughout territory where the business could not possibly be self-supporting, the Government could do such a thing purely as a duty to a part of the public, when private corporations could not be expected to do the same thing. And then, of course, there is always the possibility that the Government may require the exclusive handling of wire communications for purposes of war. And whether we concede the economic advantages or not of such Government operation, there is a certain consistency in maintaining that if the Government provides and operates mail communications, it ought to provide and operate all other communications, so as to have a correlated whole.

But nobody, the *Press* continues, "can extract cold reason out of the proposition that because the Government has done well with the parcel post it could do as well with the telegraph lines." We are reminded that in the one case it had all the necessary machinery in existence and in operation; in the other, the whole service would have to be created, "unless it took over the whole telegraph business as it stands, with all the persons now engaged in the telegraph business to help out the Government." And in this case the same results, as far as the public is concerned, would be obtained by having the Government undertake, not to own, but "to control the operation of the telegraph lines and to govern their rates and the conditions of their rendering their service—to control and govern all this, privately owned and operated."

Some Legal Phases of the Proposition for Federal Ownership and Operation of the Telephone.

Charles T. Russell.

In addition to the economic and practical objections to the scheme of federal ownership and operation there is another side to the matter which its proponents have either ignored or failed to recognize. That is the constitutional power of the federal Government to acquire and operate the telephone properties.

Lawyers who have given thought and study to the matter say that there is a very serious question indeed as to the constitutional power of the federal Government to take and operate even the interstate long distance telephone lines, and that they can find no authority whatever by virtue of which it can lawfully acquire or operate local or intrastate telephone systems.

The federal Constitution is more than a mere series of legal rules; it is a guide to good government, framed by a body of Americans inspired by the purest and most patriotic motives, and probably the wisest and ablest deliberative body ever assembled. It was intended as a basis for a permanent system of government and the principles upon which it was founded were believed by its makers to be eternal and absolutely necessary to the future welfare of the American people. From those principles, aided by long experience, were derived its notable provisions which recognize and secure the rights of localities and individuals. The general plan for the government of the Union was to have a centralized power over such matters only as were national in their character and to leave the rest, including all local matters and affairs, to the respective states.

Accordingly the federal Constitution strictly limits the activities of the federal Government to matters concerning which the Union as a whole is interested. It can declare and carry on war and make peace; create, maintain and regulate an army and navy; coin money; provide for the Post Office service; grant patents and copyrights; punish piracies and offenses against foreign nations; make uniform rules of naturalization and bankruptcy; provide for the government of the territories, foreign possessions and the District of Columbia; regulate commerce with foreign nations and among the several states; raise money by taxes, duties and loans to carry on the government; establish courts and make such laws as are necessary and proper for those

purposes. All of the federal Government's powers are set forth in detail in the Constitution itself.

When the Constitution was presented for acceptance it was thoroughly understood by the people of the thirteen states that all the powers not plainly granted to the Congress were reserved to the several states. This was a matter of course. The Union was a sort of partnership, and when a man enters into a partnership he retains his control over his family affairs and private business. You do not have to put that into the partnership papers. Nevertheless the watchful critics of the Constitution objected that the reservation to the states was not specifically made, and it was found necessary in order to get it adopted to promise that it should be immediately amended in this respect. Consequently at the very first Congress, held in 1789, an amendment was proposed and unanimously ratified by the states and made a part of the Constitution in the following language:

"The powers not delegated to the United States by the Constitution, nor prohibited by it to the States, are reserved to the States respectively, or to the people." (Art. X.)

Nothing could be plainer than the meaning of the language of this amendment. Every intelligent man at all familiar with constitutional history knows that if telephone systems had been in existence at the time the Constitution was adopted the entire control of such systems within the limits of each state would have been reserved to that state. No one would have even suggested that they could be operated by the federal Government.

Equally absurd is it to say that the words "post-roads" can be construed to mean telephone routes. These roads belong to the states, cities, corporations or individuals and not to the United States, "and are declared post-roads only to prevent the carriers from being interfered with, and the mails from being delayed in their transportation, and the postal service from frauds. The Government has no other control over them." (96 U. S. 17.) They include waters, canals and plank roads while the mail is being carried thereon and all letter-carrier routes in towns or cities, and also railroads. A post-road is merely a route on which mail is carried.

Some people may ignorantly say that the Congress has made telegraph routes into post-roads. But this is not so. The misapprehension when it exists arises from the fact that in 1866, in

order to aid and encourage the development of the telegraph systems the Congress passed the so-called Post-Roads Act (14 Stat. 221) which provided in substance that telegraph companies might with Government consent construct and operate telegraph lines upon the military and post-roads of the United States, provided they accepted the condition of giving preference over their lines to government business and gave the Government an option to purchase any lines so constructed. The companies had of course to get the additional consent of the local authorities. This act when accepted gave the telegraph companies an opportunity to use all post-roads but did not convert the telegraph lines into post-roads. Moreover the law very properly recognizes and treats the telegraph and telephone as distinct and essentially different institutions, and the United States Supreme Court has directly held (174 U. S. 761) that a telephone is not a telegraph and that the provisions of the Act of 1866 did not extend to nor include telephone companies. That statute is therefore of no importance whatever in the consideration of the effect upon telephone systems of the power in the Congress to legislate concerning post offices and post-roads.

This country is not a unit but a union of states with a written Constitution strictly limiting the authority of the central Government. That the telephone is not a true Post Office function is, furthermore, well recognized by those countries where the telephone systems are governmentally owned and operated. In Sweden the telephone administration has no relation whatever to the Post Office Department, and the telephone systems are separately administered in Italy, Norway, Denmark and Switzerland. In some countries the government telephones are administered under a Department of Posts, Telegraphs and Telephones; some under a Ministry of Public Works, etc., etc., but there is a clear distinction made between telephone operation and the ordinary post office function of mail carrying and distribution.

Assuming, however, that telephoning is commerce and that telephone lines and appurtenances are instruments of commerce, what then is the power of the Congress as to their acquisition and operation? The telephone companies are the creatures of the states, and they are primarily local in their nature, management and operation. They are even more intimately local in their nature than street car and gas and electric light corpora-

tions. In their origin they were confined entirely to local service. The interstate service furnished by them is only incidental to and wholly dependent upon their local service, without which it could be neither established, maintained nor supported. In the state of New York of all the telephone use of the lines of the New York Telephone Company over 96 per cent is purely local, that is, entirely between points within the state, and less than 4 per cent is interstate.

Bench and Bar. 28: 35. January, 1912.

Government Ownership of the Telegraph Lines.

In the accounts of the Hitchcock episode, or escapade, as it might well be called, we have not seen as yet clear references to the authority under which, if the "recommendations to Congress" proposed to be made by the Postmaster General were adopted by that body, the United States would proceed to acquire the telegraph lines, at a cost which might reach the half billion dollar mark, if the figures given by the Postmaster General are correct. Comparatively few lawyers, perhaps, are familiar with the provisions of the so-called "Telegraph Act" of 1866, passed by Congress a year after the termination of the Civil War. It became a law, therefore, at a time when militarism and war requirements were vividly in the public mind, and so rather extraordinary concessions were offered to such telegraph companies as would organize under or accept the provisions of the Act. By this law it was provided that any telegraph company, then, or thereafter to be, organized under the laws of any state, should have the right to construct and maintain telegraph lines, over any portion of the public domain of the United States, or over or along any of the military or post-roads (all public roads are *post-roads*) of the United States, and over, under, or across the navigable streams or waters of the United States. In addition to this privilege, the companies were given the free right to take from any public lands through which its telegraph lines might pass, the necessary stone, timber, and other material for its posts, stations, and other needful uses. In return for this, the companies agreed to give priority of transmission to governmental or departmental telegrams, at such rate as might be fixed by the Postmaster General, with the further proviso that the United

States might at any time, for postal, military or other purposes, purchase all of the telegraph lines, property and effects of any or all of the companies acting under the provisions of the Act, *at an appraised value to be ascertained by five competent, disinterested persons, two of whom should be selected by the Postmaster General, two by the company interested, and the fifth by the four so previously selected.*

It will be seen, therefore, that the law which would enable the United States Government to carry out the Postmaster General's recommendations is already on the statute books, and it only remains for Congress to pass a simple resolution, and the Postmaster General to nominate his quota of the appraisal board, to set in motion the existing machinery.

But of course nothing of this sort will be done. The public is not ready yet for municipal ownership on so large a scale, if ever it will be. The people generally do not want it. The President knows this. Congress knows it.

GOVERNMENT OWNERSHIP OF

American Telephone and Telegraph Company.
Comparative Table of First-class Mail, Telegraph and Telephone Traffic. (Partly estimated.)
Europe and United States. (Nearest Fiscal Period—Year 1912.)

Countries	Telephone Conversations Operated by	Telegrams* (See Note)	Total Telephone Conversations and Telegrams	Mail	Telegrams and Mail	Telephone Conversations and Mail
Austria	G.	364,578,000	23,866,000	388,444,000	1,642,006,000	19%
Belgium	G.	138,028,000	9,460,000	147,488,000	384,641,000	28%
Bosnia	G.	1,500,000	1,000,000	2,500,000	25,665,000	9%
Bulgaria	G.	7,500,000	2,300,000	9,800,000	44,455,000	18%
Denmark	P. G.	226,665,000	3,878,000	230,544,000	163,700,000	58%
France	G.	396,102,000	67,120,000	463,222,000	1,723,958,000	21%
German Empire	G.	2,324,880,000	64,309,000	2,389,189,000	5,450,565,000	30%
Great Britain	G.	1,098,395,000	88,494,000	1,186,889,000	4,197,300,000	22%
Greece	G.	3,000,000	1,970,000	4,970,000	19,777,000	20%
Hungary	G.	203,357,000	13,979,000	217,336,000	605,974,000	26%
Italy	P. G.	230,000,000	25,315,000	255,315,000	765,480,000	25%
Luxembourg	G.	4,920,000	260,000	5,180,000	21,818,000	19%
Netherlands	P. G.	169,711,000	7,077,000	176,788,000	299,428,000	37%
Norway	P. G.	170,000,000	4,000,000	174,000,000	95,831,000	64%
Portugal	P. G.	7,000,000	5,000,000	12,000,000	57,899,000	17%
Roumania	G.	20,000,000	4,300,000	24,300,000	74,511,000	25%
Russia and Finland	P. G.	900,000,000	45,000,000	945,000,000	1,464,257,000	39%
Serbia	G.	5,927,000	2,385,000	8,312,000	28,681,000	22%
Spain	P. G.	35,000,000	6,600,000	41,600,000	143,054,000	23%
Sweden	P. G.	434,163,000	4,996,000	439,159,000	199,761,000	69%
Switzerland	G.	68,569,000	6,494,000	75,063,000	376,638,000	17%
Total Europe	P. G.	6,809,296,000	387,803,000†	7,197,099,000	17,775,402,000	29%
Per 1000 population		15,172	864	16,036	39,607	71%
United States	P.	15,600,000,000	112,660,000	15,712,660,000	10,212,237,000	61%
Per 1000 population		161,995	1,170	163,165	106,047	39%

Note: Telegraph is operated by Government, except in the United States.
P.—Private Companies G.—Government Companies and P. G.—Private Companies and Government

* Included in the number of telegrams for each European country are government and service messages, also international messages (incoming, outgoing and transit).

† Includes duplications arising from the European practice of counting each international message in each country handling the message.

American Telephone and Telegraph Company.

Telephone Development of Each City in Europe with Over
500,000 Population. January 1, 1913.

	Population	Number of Stations	Stations per 100 Population
Amsterdam.....	581,000	15,953	2.7
Barcelona.....	587,000	5,063	.9
Berlin (Exchange Area)	2,320,000	144,543	6.2
Birmingham (Exchange Area)	1,069,000	18,055	1.7
Breslau.....	537,000	18,533	3.5
Brussels (Exchange Area)	838,681	21,470	2.6
Budapest.....	880,000	24,567	2.8
Cologne.....	541,000	23,158	4.3
Copenhagen (Exchange Area)	608,000	50,802	8.4
Dresden.....	558,000	23,728	4.3
Glasgow (Exchange Area)	1,150,000	41,500	3.6
Hamburg-Altona (Exch. Area)	1,207,000	71,222	5.9
Kief.....	506,000	4,635	.9
Leeds (Exchange Area)	506,000	10,657	2.1
Leipzig.....	617,000	28,245	4.6
Liverpool (Exchange Area)	1,000,000	31,764	3.2
London (Exchange Area)	7,280,000	244,320	3.4
Lyons.....	547,000	7,039	1.3
Madrid.....	600,000	4,031	.7
Manchester (Exchange Area)	1,200,000	29,453	2.5
Marseilles.....	565,000	7,735	1.4
Milan.....	599,000	10,900	1.8
Moscow.....	1,533,400	43,348	2.8
Munich.....	606,000	33,168	5.5
Naples.....	723,000	3,600	.5
Newcastle (Exchange Area)	550,000	10,980	2.0
Odessa.....	505,600	6,842	1.3
Paris.....	2,940,000	95,033	3.2
Rome.....	539,000	10,400	2.0
Sheffield (Exchange Area)	625,000	10,605	1.7
St. Petersburg.....	1,686,000	47,649	2.8
Vienna.....	2,115,000	56,747	2.7
Warsaw.....	872,478	28,935	3.3
Total of the above 33 European cities.....	36,992,159	1,184,680	3.2
Total of the 11 cities in U. S. with over 500,000 population.....	15,264,000	1,585,809	10.4

Note: Constantinople excluded from above, as the telephone was not in operation Jan. 1, 1913.

GOVERNMENT OWNERSHIP OF

American Telephone and Telegraph Company.

Telephone Development—Urban and Rural. Europe and United States. January 1, 1913.

Countries.	Oper- ated by population	Number of stations.		Stations per 100 population.	
		In cities of over 100,000	Outside of cities of over 100,000	In cities of over 100,000	Outside of cities of over 100,000
		population	population	population	population
Austria.....	G.	83,404	77,826	2.6	.30
Belgium.....	G.	39,345	19,295	1.8	.36
Bosnia*.....	G.	—	850	—	.04
Bulgaria*.....	G.	1,000	2,200	1.0	.05
Denmark (March 31, 1913).....	P. G.	50,802	67,596	8.4	3.10
Finland.....	P.	9,472	25,728	6.3	.84
France.....	G.	137,018	156,177	2.3	.47
German Empire.	G.	683,948	618,724	4.6	1.20
Great Britain (March 31, 1912).....	G.	550,283	188,455	2.6	.75
Greece.....	G.	854	2,243	.5	.09
Hungary.....	G.	25,972	49,766	2.6	.25
Italy (June 30, 1912)*.....	P. G.	46,211	42,955	1.2	.14
Luxemburg.....	G.	—	3,910	—	1.48
Netherlands.....	P. G.	42,867	34,328	3.0	.74
Norway.....	P. G.	18,903	56,097	7.6	2.58
Portugal.....	P. G.	6,868	1,172	1.1	.02
Roumania*.....	G.	4,700	16,300	1.4	.24
Russia.....	P. G.	167,777	114,704	2.0	.09
Servia.....	G.	—	3,606	—	.12
Spain*.....	P. G.	12,475	21,525	.6	.12
Sweden.....	P. G.	92,695	124,859	17.7	2.46
Switzerland.....	G.	28,350	62,223	6.0	1.85
Other places*....	P.	—	1,880	—	.03
Total Europe... P. G.	2,002,944	1,692,419	3.0	.44	
Total U. S..... P.	3,027,375	5,702,217	11.4	8.17	

P.—Private Companies

G.—Government

P. G.—Private Companies and Government

* Partly estimated.

American Telephone and Telegraph Company.*Annual Report, 1913.**Subscriber Stations*

At the end of the year the number of stations which constituted our system in the United States was 8,133,017, an increase of 676,943, including 215,181 connecting stations. 2,717,808 of these were operated by local, co-operative and rural independent companies or associations having sub-license or connection contracts, so-called connecting companies.

Telephone Toll Stations

The Bell telephone toll lines of the United States now reach 70,000 places, from many of which a telegraph message can be sent. The extent of the system is best realized by comparison with less than 60,000 post offices, 60,000 railroad stations and regular telegraph offices at about 25,000 places.

Wire Mileage

The total mileage of wire in use for exchange and toll service was 16,111,011 miles, of which 1,500,198 were added during the year. Of the total mileage nearly 13,800,000 miles were exchange wires, and over 2,300,000 toll wires. These figures do not include the mileage of wire operated by connecting companies. Of this total wire mileage 92 per cent is copper wire. 8,817,815 miles are underground, including 543,923 miles of toll wires in underground cables. The underground conduits represent a cost of \$85,700,000 and the cables in the conduits \$95,800,000—a total in underground plant of \$181,500,000.

Traffic

Including the traffic over the long-distance lines, but not including connecting companies, the daily average of toll connections was about 806,000, and of exchange connections about 26,431,000, as against corresponding figures in 1912 of 738,000 and 25,572,000; the total daily average for 1913 reaching 27,237,000, or at the rate of about 8,770,300,000 per year.

Traffic of the United States and Europe

The following figures compare the telephone traffic with the two other branches of transmission of intelligence—the mail and the telegraph—in the United States and in Europe during the year 1912:

Type of Message	Europe		United States	
	Number During 1912	Per Cent of Total Europe	Number During 1912	Per Cent of Total U. S.
First Class Mail Matter	17,775,000,000	71.2%	10,212,000,000	39.4%
Telegrams	388,000,000	1.5%	113,000,000	0.4%
Telephone Conversations	6,809,000,000	27.3%	15,600,000,000	60.2%
Total	24,972,000,000	100.0%	25,925,000,000	100.0%

In other words, although Europe has about three and a half times the telegraph traffic of the United States, and nearly twice the first class mail traffic, it has only two-fifths the telephone traffic of the United States.

The use of the telegraph in Europe was about 2 per cent of the mails, while in the United States it was but 1 per cent, the greater efficiency and distribution of the telephone causing the difference.

Plant Additions

The amount added to plant and real estate by all the companies, excluding connecting companies, constituting our system in the United States during the year 1913 was \$54,871,856, distributed as follows:—

Real Estate	\$ 6,109,675
Equipment	16,419,143
Exchange Lines	23,461,226
Toll Lines	8,803,441
Construction Work in Progress and Undistributed Plant	78,371
	<hr/>
	\$54,871,856

Plant Additions of Previous Years

The amounts added in fourteen years have been as follows:—

1900.....	\$31,619,100	1907.....	\$52,921,400
1901.....	31,005,400	1908.....	26,637,200
1902.....	37,336,500	1909.....	28,700,100
1903.....	35,368,700	1910.....	53,582,800
1904.....	33,436,700	1911.....	55,660,700
1905.....	50,780,900	1912.....	75,626,900
1906.....	79,366,900	1913.....	54,871,900

making a total for the fourteen years of \$646,915,200.

Construction for the Current Year.

Estimates of all the associated operating companies and of the American Telephone and Telegraph Company for all new construction requirements in 1914 have been prepared. It is estimated that about \$56,000,000 will be required for current additions to plant in 1914.

Maintenance and Reconstruction

During the year \$70,183,000 was applied out of revenue to maintenance and reconstruction purposes; of this, over \$13,000,000 was unexpended for those purposes.

The total provision for maintenance and reconstruction charged against revenue for the last ten years was over \$457,000,000.

American Telephone and Telegraph Company.

Annual Report, 1910.

The telephone business is unique in that it supplies its own terminals, which are vast in number, are temporary in character, and call for large investment, unique in that a very considerable part of its plant is of a rapidly deteriorating character. Underground conduits and cables and aerial cables are fast changing this, but in the outlying rural and semi-urban districts and for long-distance lines construction will always have to be overhead on poles. There is nothing analogous to it in industrial or public utility service except the telegraph.

The entire disregard or underestimating of depreciation and future replacement, is the cause of nearly all the financial disasters that have occurred in the telephone business, and has been the common failing of newcomers in the telephone field from the beginning to the present time.

Current repairs on new plant, even of the old time temporary character, were small; no surplus or reserve was provided; profits were apparently large, as were dividends.

A false atmosphere of prosperity surrounded the business which was not dispelled until replacements of plant through decay or obsolescence became imperative; until the overhead gave way to the underground, until the individual board gave

way to the multiple central office system, until central office energy supplanted the magneto system, until exacting construction requirements of long-distance speaking began, until expansion of business and extension into new fields, some unremunerative, were obligatory; until a condition existed where, to correct mistakes of the past, capital had to be expended without producing any corresponding increase in the revenue.

The inevitable was in some cases postponed by excessive charges to construction account, but came in time, as it is bound to come under such conditions. The apparent profits and dividends had been at the cost of the capital and, at the time of the greatest necessity, resources were at the lowest ebb.

Ignorantly or wilfully, every cause but the right cause was blamed, and although the management had been in the hands of the outside interests, the Bell parent company was given the responsibility, had to carry the burden, and assume the work of reconstruction and rehabilitation.

American Telephone and Telegraph Company.

Annual Report, 1911.

Telephone rates have fluctuated. Beginning with simple and crude instrumentalities and methods, with small developments, the rates were low. As facilities increased, as methods and apparatus improved, and apparatus almost new and hardly in use had to be discarded to make place for new and improved methods, rates had to be increased.

In the New York City exchanges, apparatus and plant practically good as new to the value of over eight and one-half millions of dollars, have been discarded because new improvements had made them obsolete, nearly all between the years 1883 and 1902, and the same is relatively true of any exchange system. As methods, plant and apparatus became more fixed and permanent, methods of operating improved, operating expenses declined, and reductions in rates followed—not because of competition.

Telephone service in its close personal touch with every subscriber is a unique service, different from all other public services; efficient service requires the co-operation of the user, it requires prompt attention on the part of the public.

In every use of the telephone system three human factors are brought into action—one at each end, one or both anxious and probably impatient, the one at the central office, as nearly a machine as is possible, a trained expert with at least as much intelligence and reliability as the best stenographers, typewriters or bookkeepers. This central office factor is the personal servant for the time of the factors at the end and is entitled to the same consideration that is given to their own personal staff. Perfect service depends on the perfect co-ordinate action of all of these factors—any one failing, the service fails. This should never be forgotten. All attempts so far to eliminate the personal factor of the central office, to make it a machine, have failed in systems of any extent; there are times when, at the central office, action guided by intelligence, is absolutely necessary.

Review of Reviews. 41: 244-5. February, 1910.

The Two Sides of the Telephone Discussion.

The fight was on last month, with new developments and wider interest than ever, between the friends of the telephone as a natural monopoly and the advocates of competition in this as well as all other kinds of "public service" companies.

From New York, a state in which the Bell companies are very strong, it was learned that the Legislative Committee, evidence before which was noticed in these columns last month, will recommend the control of telephone and telegraph operations in so far as they affect the public, in matters of rates and service. The president of the Bell lines had expressed himself to this committee, as on other occasions, in favor of public regulation "if intelligent." Much protest was made, however, by many "independent" telephone companies in the State, mostly in the formative stage, and in a position to be much hampered by regulation.

Such control would probably aid the "Bell" companies, which are in a position to give better service than the others at present. Contrariwise, it was stated in testimony taken in St. Louis on the 8th that the independent telephone companies were raising \$150,000 to oppose absorption by the big American Tel. & Tel. of other and weaker "independents."

Here is the view of the radical or insurgent citizen. He represents the spirit of pioneer development, and scents danger in monopoly of any kind. He insists on competition with these as with all public service companies.

Just such a hot discussion, only with railroads as the object, took place in the eighties. Men in the big way of business, with their friends, wanted through cars, which meant fewer different railroad managements and companies. Different railroads had different gauges and different stations at the same terminal points. Passengers had to change cars, and bulk freight to be broken frequently. All this expense, however, said the insurgents of that day, was a very small price to pay for free and open competition. Nor did they trust regulation of rates and service by anybody to represent the people.

Today we have through cars across the continent,—and the Interstate Commerce Commission.

Review of Reviews. 41: 245. February, 1910.

The Telephone and the Subscriber.

A puzzling feature in the attempt of an independent telephone company to enter New York City in competition with the Bell lines, some years ago, was the contrast between the testimonial letters widely advertised by one company and those similarly advertised by the other.

Scores of letters from business men in localities enjoying telephone competition were reprinted by the company seeking the franchise, to show that said competition had been beneficial to the subscriber.

Whereas the Bell company took even larger space in the newspaper advertising columns, and reproduced even more letters from similar business men, declaring competition to be an unmitigated nuisance.

The facts in the case show a difference between rural and thickly settled communities. There are only thirty companies in the Bell system. Associated with these are 7800 "independents." Most of these are rural or neighborhood enterprises, covering localities not densely enough populated to attract "Bell" invest-

ment. Unconnected with the Bell system are some 16,000 more such neighborhood associations.

Plainly the country dwellers of the nation are much happier because of the 2,100,000 stations operated by these 23,800 smaller companies. They do not compete with the Bell lines as much as they extend them, now or potentially.

But in a couple of hundred communities, mainly in the Mississippi Valley and the Middle West, where an independent company bids for business along with the Bell Company, this question has become very important and pressing of late; whether the public is served better by both than it would be by either with a monopoly.

One fact stands out,—that in nearly all the cities in question the subscribers to either of the systems can now show more telephones per thousand of whole population than they could before there was any competition.

Thus new construction may have gone at a more rapid pace than without competition.

But subscribers to only one system cannot reach subscribers to the other alone. The figures are given by a prominent "independent" that in eight of the largest cities that have competition only twelve out of each one hundred users subscribe to both telephones. Of the remaining eighty-eight, one portion cannot reach the other. They could be served more cheaply, other things being equal, if the companies were combined, with duplicate poles, wires, instruments, and operators got rid of.

The expense of duplication is the price of suspicion. Whether it is justified or not will appear from the failure or success of State efforts to regulate wire communication.

What has actually been done for the public of New York City by the commission to which it is proposed to add control over the wires is shown in the case of the surface cars on Manhattan Island. The report issued on the 13th of last month shows that these trolley lines, under orders from the commission, increased certain facilities to passengers by proportions varying from 11 to 57 per cent. Just such a commission was advocated for Ohio on the 3d by Speaker Mooney, of the General Assembly, who liked the way they do it in New York. The Maryland bill for a similar protective body seems likely to pass at the present session.

Review of Reviews. 41:246. February, 1910.

The Telephone and the Investor.

"Can I get a good run for my money in the stock of the independent 'phone company starting up here,—or had I better stick to the American Telephone & Telegraph securities?"

This month it is particularly interesting to examine the facts of record disclosed to the cold-blooded investors who are more and more frequently asking questions like the above,—who want so much per cent with so much safety, and are not affected by local, personal, or political bias.

It often surprises inquirers from New England and other strongholds of the Bell companies, to learn the number of well-conducted "independents." Such companies may be on a very small scale and yet managed very conservatively. Readers of the *Review* of eight years ago this month recall the instance of the co-operative exchange at Grand Rapids. It had already grown to 300 subscribers, having started eight years before with only seventy. None but subscribers were allowed to hold the stock. The company was prosperous and its dividends of 1½ per cent brought the cost of a business 'phone down to only \$1.50 a month and of a residence 'phone to 25 cents, as compared with the \$4 and \$3, respectively, that the Bell Company had been charging.

Such local problems have been met by local people and on the whole satisfactorily to the extent of 16,000 different companies, not connected in any way with the Bell system. The average in this group is small, about sixty-two "stations." Many are mutual associations or co-operations, like that at Grand Rapids. They represent so many groups of neighbors who want to talk with one another but who are not densely enough planted around a given center to attract the attention of the big Tel. & Tel. Company. Nor would they in most cases supply many patrons for its long-distance lines.

Not so promising to the investor is the group of about two hundred and twenty-five companies averaging half a million or so of capitalization. In cities like St. Louis and Kansas City, such "independents" are doing business on a good scale, paying dividends and satisfying the public.

But leaving these isolated successful territorial groups, one finds that nearly 10 per cent of the companies in the half-million dollar average class have failed within the last few

years. About half of them have found that the business could not be carried on properly without a raise of rates, which, of course, usually brings as much dissatisfaction from subscribers and harassment by local authorities as might be visited upon the monopoly itself.

Thus heavy disappointment has come to thousands of school-teachers, ministers, and others of limited means, whose local loyalty had been wrought upon by the promoters of bonds sold at a discount and carrying a stock bonus.

Often the managers of the new company seemed as ignorant of telephone science as the investors. They found that they could not pay the high interest on the money that the discounted bonds represented and also pay dividends on stock signifying pure "water."

One obstacle was the unexpected wearing out of equipment. Against this the Bell companies have learned to write off about 6 per cent a year. Reports from independent companies do not show nearly as high an average.

Then peculiar to this business is the increasing expense per instrument with the number of instruments used,—just the reverse of most enterprises.

Also peculiar is the impossibility of insuring wires against damage by storm, at a reasonable rate. The telephone company must do its own insuring, must establish a reserve fund out of earnings. The principle of "averaging risks" makes it obvious that the smaller a company, the less it is in a position to insure itself economically.

Here are the cautions for the investor in the independent company: Make sure that the management is not interested in a construction company which makes too large a profit on selling poles and wires and instruments to the new 'phone company. Compare it for capitalization *per station* with established companies. For instance, the majority of the larger "independents" average more than \$200 per station, though they have hardly any of the expensive long-distance lines; while the Bell system, with 456,000 miles of "long-distance" wires, averages but \$149 per station. Finally, scan the allowance for depreciation. Together with operating expenses this should run nearly three-fourths of the gross earnings, on the Bell basis. Many of the independent companies spend but \$50 or \$60 per \$100 of business done on running and maintaining the plant.

Literary Digest. 48:3-4. January 3, 1914.

The Telephone-Telegraph Divorce.

Not everybody is pleased at the terms of surrender by which the American Telegraph & Telephone Company releases its control of the Western Union Telegraph Company, promises certain reforms, and in return escapes prosecution under the Sherman Antitrust Law, but most of the press join President Wilson in expressing gratification over the agreement. "The episode," says the St. Paul *Dispatch* (Ind.), "proves beyond doubt the supremacy of the State over business, however big; and, what is more to the point, proves that corporations are coming to realize it." "The Wilson doctrine of regulated competition," remarks the Newark *News* (Ind.), "has won a more sweeping victory for the people than any yet achieved under the great antitrust statute—the Sherman Law—and without resort to the courts." On the other hand, Mr. Hearst's New York *American* (Ind.), suspecting a plan to thwart government ownership of the wires, says that no wonder Theodore N. Vail, head of the telephone system, "is grateful to Attorney-General McReynolds for suggesting a means by which the great telephone business would be saved to the private financial interests." The principal changes contemplated by the agreement are thus sketched in the company's statement:

"(1) The American Telegraph & Telephone Company will dispose of its entire holdings of stock in the Western Union Telegraph Company in such a way that the control and management of the latter will be entirely independent of the former and of any other company in the Bell system.

"(2) Neither the American Telegraph & Telephone Company nor any other company in the Bell system will hereafter acquire control over any other competitive line of exchange.

"(3) Arrangements will be made by the American Telegraph & Telephone Company, by which all other telephone companies, including all independents, may obtain for their subscribers toll service over the lines of the Bell system."

This explanation of the Bell system's position is furnished by President Vail:

"No such thing as dissolution has occurred, for the reason that no such thing as a merger ever occurred in the past. The

relations between the American Telephone & Telegraph Company and the Western Union have never been in the nature of a merger. The development of the mutual relations has been of a complementary character, or an extension by each of the other's facilities.

"Care has always been taken that nothing be done which would affect whatever competition might be considered to exist. The two services are, in fact, not competitive; if there is in theory any competition, it is because in some instances the use of one service may be an alternative for the use of the other.

"If a real merger were made, and time given to complete the merger, some economies and additional new services of advantage to the public might be introduced. Whatever has been done already, it is believed, will be allowed to stand, and it is probable that some of the additional cooperative work may yet be accomplished.

"There is no setback, in this separation, to the material interests of either company, but on the contrary, now that there is some understanding of what can be done and what can not be done, greater progress along the lines defined can be expected.

"The Attorney-General has been very considerate of the material interests of the companies, so far as consistent with his public duty, and this attitude was clearly reflected by the President, and we think the problem has been worked out to the best interests of the public and of the companies."

For the benefit of those who suspect that the Bell interests and the Department of Justice came to terms quickly in order to stave off public ownership, the Columbus *Dispatch* (Ind.) insists that—

"It is no victory of the moment . . . either for the people or the companies. The approach to it has been by hard marches and campaigns that seemed almost fruitless, but were all the time creating a public opinion before which monopoly can not stand and continue its extortion. In this agreement for a voluntary dissolution there is a lesson that other trusts should be quick to learn.

"It may appear that, with Government telegraph and telephone ownership suggested by the Administration, the wire

trust has made a virtue of a necessity, but it has found a real, and not a sham, virtue at that."

Mr. Munsey's Progressive Washington *Times* points to the night-letter and day-letter service, and many other conveniences provided in the past few years, and wonders if there is not a probability that the separation of the two concerns will hinder further development:

"The Government says, not going any further into the matter, that it has restored the old competition. Well, if it has restored the old conditions that went with the old competition it will have done a very poor day's work for the American people. But fortunately Vail feels justified in saying that in spite of the divorce—that is to say, in spite of the restoration of the old competition—he believes the improvements and advantages which have been given to the public can still be preserved. It would be a sorry day, we say, if they couldn't. It would be something to make us all gasp, if modern government, seeking to do us good, were merely driving us back into the Dark Ages.

"But that isn't all the question. Even if there can be preserved the benefits which were bestowed upon the public in spite of the Government, there still remains the question of whether—now—there can come any more. None of those benefits achieved came from or were suggested by the Government. If it is possible that the most the Government can do in this matter is to enjoin, in effect, any more such improvements and advantages for the public—enjoining them by making it impossible for the genius of management to work them out as those others were worked out—why then we guess that the 'great victory' of the administration wasn't such a heart-breaking blow to the telephone monopoly, but was a very bad black eye to the American public."

The St. Paul *Dispatch* (Ind.) takes a brighter view. It finds reason to hope that the public will "gain through the throwing open of the telephone business to real competition." And the Brooklyn *Eagle* (Ind. Dem.) offers this encouragement:

"The discrimination by the telephone interests in the handling of telegrams sent out over the telephone, a discrimination of which the Postal Telegraph Company has persistently and

with justice complained, will disappear. Also, districts where independent telephone companies exist and where they have been hampered, but in no degree crushed, by the activities of the Bell people, will obtain toll service between the Bell system and rival systems upon the payment of reasonable charges. In this concession alone the telephone interests confer a public benefit affecting a very large proportion of the people."

Merchants' Association of New York.

Inquiry into Telephone Service and Rates in New York City.
pp. 12-17. June, 1905.

Inquiry in all American cities having a population of more than 50,000 shows a wide variation in the rates charged for telephone service. A superficial view of the question of telephone rates is that a comparison of such rates in different cities would give correct deductions as to the reasonableness of rates in any given city. A closer examination of the subject, however, shows that such comparisons are quite deceptive. On careful consideration of the whole question, it becomes evident that both the general conditions and those peculiar to the telephone business differ so widely in different places that a bare comparison of rates can only be misleading and inconclusive. As is well known, outlays for labor, rent, taxes, real estate charges, etc., vary widely in different cities and countries, those in America being much higher than those in Europe, and in America those in large cities much higher than those in small cities. The subject is an extremely complex one, and the difficulty is to find factors in different places which are similar, so great are the variations in almost any item which may be selected for comparison. For example: there are differences in the quality, range, and quantity of service rendered, and particularly in the methods of charging for the service. There are differences also in the number of subscribers who take different grades of service.

Another striking difference in conditions peculiar to the telephone business between large and small cities should be mentioned. In a small city a single central station suffices for prompt intercommunication between two or three thousand

users or individual stations. A single switchboard and single operator completes each connection called for, and the area served being comparatively limited, the wire-mileage is relatively small. In large cities such simple conditions do not, and in the very nature of things cannot, exist. For example, in the Borough of Manhattan seventeen central stations are required. Each of these must not only provide for intercommunication between the individual stations directly attached to it, (the average number being over 8,000) as in the case of the single central station in a small city, but must also provide for prompt intercommunication with sixteen other central offices and over 140,000 individual stations outside its district.

In view of these variable factors it is impossible to select any item of plant, which may be intelligently used, in reducing costs or charges in various places to common terms. Moreover, the telephone message varies greatly in cost in different places, for the reason that the amount of plant involved, and the amount of labor required to make the message effective necessarily vary, and therefore, the message cannot be taken as a proper unit for making comparisons. Indeed, in the opinion of the Committee, there is no common factor or unit of measure by means of which, through comparisons with other cities, sound conclusions as to the reasonableness or unreasonableness of the telephone rates in any given city can be reached. It is obvious that the fairness of the rates of charge in a specific city must be determined by the fair cost of service in that city, and not by the rates of other cities where the conditions are never identical and seldom equal.

Fair Cost of Service

The Committee holds that the fair cost of service to the consumer should comprehend:

(A) Operating outlays necessary to the highest efficiency, including an ample allowance for replacement, and

(B) A reasonable return on the actual investment necessary to fullest efficiency of service, including a fair allowance for contingencies.

Careful consideration was given to the matter of depreciation or replacement, this being, in the opinion of the Committee, an element of very great importance in the safe management of

telephone investment. Improvements in the art of telephony have been numerous, frequent, and often radical, and at rapidly recurring intervals it has been necessary to discard, as obsolete, equipment in fair physical condition installed but a few years previously at great cost.

The telephone business demands a continuous accession of fresh capital to satisfactorily serve the public.

Toll Telephone Practice. pp. 11-13.

J. Bernard Thiess and Guy A. Joy.

Rural Telephone Equipment

Telephone development in its early stages was confined for the most part to the cities and large towns. The growth in these communities was so rapid and required so much capital that the development of rural districts did not commence until a later date. At the time the fundamental Bell patents expired the keen competition inaugurated by the independent companies began almost at once to stimulate this important phase of development.

These independent companies were comprised, in a great number of instances, of farmers and country merchants. As a result of their almost universal inexperience in building or operating such plants, the construction of the early rural systems was crude in many respects. The class of service expected, however, was much below that necessary to give satisfaction to subscribers in urban districts and, moreover, the necessity for rigid economy was frequently imperative. The kind of service actually obtained was usually sufficient to the needs, at least for a time. Service that now would not be tolerated was then often welcomed as of great benefit, in contrast to the entire absence of any kind of communication, except the telegraph, but a short time before.

As a means of keeping down the cost of such plants, the farmers often contributed the poles for line construction, using native timber of many kinds; and furthermore, gave extensively of their time to assist in the work of construction. The cash purchases were usually limited to switchboards, wire and telephone sets. These conditions contributed to low cost and low

rates. If the service was imperfect and slow, it should be remembered that a delay of a few minutes is not of great consequence in business transactions in such communities, where the stress of city life is so little in evidence.

But conditions as they were a decade ago, have been undergoing a marked change, and the increase in prosperity among farmers, as well as their greater enlightenment and experience, have produced a demand for better service. The present tendency is toward better equipment and construction in most instances. The early mistakes necessarily exerted a lingering influence on the service, because they generally related to the construction of the plant and were hence too costly to be eliminated until the approach of the natural reconstruction period.

The efficiency of a plant from a service standpoint is largely settled as soon as the construction is complete. The early errors that were made in laying out and building these plants, and their costly effects, may be observed still in many sections of the country. The practice of coöperative construction without regard to proper methods or standards is now widely recognized to be undesirable. Yet many hundreds of rural plants were built wholly or partly in this way. It was often the rule, for example, to require country subscribers to build their own lines up to the boundary of a restricted exchange area or zone, at which point the telephone company or association assumed the construction and ownership of the plant. The type of line construction obtainable under this plan in most instances was far below a proper standard, owing to the inexperience of those who built such lines and the rigid economy generally practiced. Thus we find in our western country some very crude conditions, such for example as barbed-wire fence lines. Even when fences were not resorted to, the character of pole lines was often such as to be a public inconvenience, or even a menace. Native timber was used almost exclusively and the bark as a rule left on; the sizes as to length and diameter were extremely irregular in many cases. Again, the timber was sometimes so hard or so crooked that linemen's spurs were useless and pole climbing as an art reverted to old-fashioned methods.

In this connection a description of a line observed by the

authors in eastern Nebraska may be of interest. The timber used for poles was osage hedge and is not only excessively crooked but also very hard. At the top of each pole was nailed a loop of wire which served in lieu of an insulator and the line wire was strung loosely through these loops. No apparent attempt had been made to avoid trees or foliage, which grew up and around the line wire in dense profusion. Whether the service over this line, in good weather and bad, was of satisfactory character, will be left to the reader's imagination.

Farmers who have had experience in the ownership of these rural lines are often glad to turn them over to the telephone company, at least ultimately. The maintenance of poor construction at a standard of high efficiency is an expensive matter and the telephone company which succeeds to the ownership of these lines will probably replace them as soon as feasible by standard construction. A company making this change will naturally use its toll routes as far as feasible, at least where toll and rural lines were once parallel on the same right-of-way. The need for entirely new pole lines may be confined to short stretches, if the toll route is followed wherever it is economical to make use of it. Even though the toll line does not follow the most direct route for rural distribution, it may still be economical to use it. This method of reaching rural subscribers is resorted to quite extensively.

Current Literature. 53:414-5. October, 1912.

The First Commercially Feasible Submarine Telephone.

The first practical submarine telephone was demonstrated a few months ago in Seattle by the inventor, Alfred Williams, a young English engineer. To accomplish his design Mr. Williams had to overthrow two basic laws of electricity recognized by every authority on the subject.

In the presence of the United States cableship "Burnside" and an assembly of electrical engineers and physicists, Mr. Williams gave the first test of this revolutionary method of cabling and telephoning under water. The commercial value of his invention may be gauged from the fact that whereas it will cost the United States \$400,000 to lay the new cable to Alaska according to

established methods, Mr. Williams's invention would enable the Government to undertake the same work for \$20,000, a saving of \$380,000. Again, the Williams system will greatly increase the present speed of cable signals. Above all other things, according to the prediction of the writer in the *Technical World Magazine*, it will make possible an actual conversation between continents.

The cable employed by Mr. Williams in his demonstration was a bare iron wire eleven miles long, stretching from a point on the mainland to the north end of Vashon Island and lying in naked contact with the salt waters of the Pacific. Over this bare wire was sent the sound of the human voice and continuous and distinct conversation was kept up for hours with the mainland at Seattle. "I looked at the man who sat next to me," Mr. Donaldson goes on to say, "a distinguished professor of physics from a noted university. On his face was the puzzled expression of one who had just stepped from a well-known land into a world of unreality and had not yet adjusted himself to the new conditions." For he saw two established laws of physics broken. These laws, Mr. Donaldson explains, were: (first) the water was a conductor of electricity—altho a poor one—and that any bare wire conductor in contact therewith would be short-circuited when a current of electricity passed over it; and (second) the law that it was not possible to have an electrical charge on a metallic conductor without that conductor's possessing an electrostatic capacity. But the incontrovertible fact was that both of these things were done under exacting conditions and in the presence of men who appreciated the results that must follow the establishment of these facts.

If experience confirms the value of the inexpensive and ingenious Williams system, cabling and long-distance calls across the ocean may soon become part of the ordinary business routine. We shall be able to call up Peking and Paris as we now call up Central.

Contemporary Review. 102: 514-9. October, 1912.

The Trading Departments of the State. Godfrey P. Collins.

It is an axiom amongst business men that no business, private, municipal, or State-owned, should be carried on at a loss. Someone has to make up the deficit; the creditors of the private trader,

the ratepayers of the Municipality, the taxpayers of the State. The inevitable end of the private business that does not pay its way is bankruptcy.

The managers of a state-owned or municipal business are relieved from various anxieties that beset the private trader. They have not to meet competition; they are not asked to show big profits, they need not even make their department pay. This assertion can be verified by the most cursory examination of the [British] Telegraph Department Account. State ownership of monopolies is so rapidly coming to the front in the political world that an inquiry into the result of the present trading of a State Department analysing the causes of success or failure, and pointing out the dangers to be avoided in the future, may not be out of place.

Even with collective ownership of monopolies there is still room for individual enterprise. With state ownership and private ownership running side by side, the best elements in both act and react upon each other, with the result that irregularities in either are revealed and remedied. State management in carrying letters has been an undoubted success, but the same cannot be said of the telegraph or telephone business. In the first case, little capital has been required; that has made the task more simple, but in the telegraph services the loss, according to the Postmaster General, May 15th, 1912, involved during the last ten years has amounted to the enormous sum of at least ten millions. It is only fair to add that this includes the sum spent on capital, but through this annual loss all the public money invested in the telegraph service since 1870 has been lost, and will continue to be lost unless rates are so adjusted as to wipe out the deficit. This gigantic figure must startle any ordinary man, and force him to ask how a business run on such abnormal lines can be kept going. The obvious answer is that the unfortunate, and, generally speaking, unreflecting taxpayer, is compelled to make up the deficiency, or, in other words, that taxation has been and continues to be imposed for the sole purpose of balancing the loss.

In the Annual Report of the Postmaster General we have the frank admission that "in the absence of a capital account, a complete statement of accounts cannot be furnished," rather a striking admission from a public trading department. Is it possible to conceive the chairman of a company calmly making a similar

remark to a meeting of his shareholders? Assuredly the time has arrived when a full and accurate financial statement should be prepared, so that the taxpayers, who are the nation's shareholders, may judge as to the manner in which their money has been invested.

Notwithstanding that a complete statement of accounts cannot be furnished, sufficient is revealed to demonstrate that the finances of the department are in a very bad way. For confirmation, it is sufficient to turn to *An Historical Summary*, published by the Postmaster General, in which we are told "At no time has the revenue from the telegraph services been sufficient to pay interest on the capital, and for the last twenty years the service has been carried on at a considerable loss," a total loss, as already stated, of ten millions during the last ten years. When Parliament passed the Telegraph Act in 1868, difficulties were encountered with two powerful bodies, the press and the railway companies, as the former had already made their own arrangements with the telegraph companies as to their rates for telegrams. In the Act clauses were inserted providing that press messages amounting to seventy-five words could be transmitted between the hours of 9 a. m. and 6 p. m. for one shilling, and 100 words between 6 p. m. and 9 a. m., while duplicate copies containing the same information were to be charged only 2d. That this arrangement was unbusinesslike and decidedly detrimental to the best interests of the public is clearly proved by the admission of the Postmaster General, who, in reply to a question in the House of Commons, stated that these charges entailed a loss in 1910 of £205,000 to the taxpayer; nor is there any reason to assume that the result had been any more satisfactory in previous years. Certain railway companies have the right to send telegrams over post office wires free of charge. This agreement was incorporated in the Telegraph Act of 1868, when the telegraph companies sold their way-leaves and telegraph matters to the State. The value of the free telegrams in 1910 amounted to about £60,000. The yearly loss on press messages and through the present arrangement with the railway companies amounts to £265,000, while the yearly loss to the National Exchequer through the rates charged to the public amounts to £754,000 making a total of £1,019,000. Various reasons are accountable for this deficit.

In 1883, twelve words for 6d. was introduced, the Postmaster

General anticipating in the House of Commons on March 29th, 1883, that this rate would involve a loss of £177,000 per year, which he then anticipated would be wiped out in four years, an anticipation which experience has falsified. In 1887, Jubilee year, further concessions were made involving an estimated loss to the revenue of £57,000, which increased by 50 per cent in four years to £92,000.

These definite statements regarding press and railway telegrams and concessions to the public are of an extremely disconcerting character, and if they had been made by the directors of a private business would have occasioned anxious questionings; but in a State business they are received apparently as a matter of course, and without comment.

Undoubtedly, political pressure was the cause of some of these rates being made, and it is admittedly difficult for Governments to resist demands, good enough in themselves, but unsound from a financial point of view. But surely the burden of particular concessions should not be placed on the shoulders, however broad, of the general taxpayer.

The spirit which animates government departments is conducive more to efficiency than economy. Lack of efficiency at once leads to public criticism. At the Admiralty and War Office, where the safety of the nation is the one and only question, efficiency must be purchased at all costs; but in a public trading department, where only the convenience of the public has to be studied, efficiency should be combined with strict economy and sound financial principles. It has been argued, quite erroneously in my opinion, that because the Post Office as a whole makes a net profit on its transactions, therefore we can afford to conduct one of its branches at a loss. In other words, the profit earned by carrying letters is to be utilized for cancelling the loss incurred by sending telegrams. Is it conceivable that the directors of any business composed of three departments would be content, year in and year out, to contemplate one department making a heavy and growing loss? Would they not take steps to dismiss the manager if he could not show a profit, and instal a new manager in his place? These difficulties are inevitably heightened and multiplied in a State Department, but it is radically unjust and financially unsound to force people to contribute towards the upkeep of a non-paying department which is to them of no personal benefit.

No one will contest the statement that the telegraph service is used mainly by the people who pay income tax either as private persons or in their business capacity. It seems to have escaped public notice that the extra taxation imposed to balance the ever-recurring loss lightens the pockets of the poor as well as of those who reap a benefit from the service.

With this record in the management of the telegraph service, it would be the height of folly not to consider seriously the financial position created by our recent solid investments in the telephone service. Unless we profit by an ample recognition of previous mistakes, we shall undoubtedly repeat them. The very persons we have mulcted by the mismanagement of the one department will be called upon to make good the inevitable losses sustained by the other. The advantages of a public ownership of telephones are apparent and in accordance with modern ideas. Grievances, either of the subscribers or of the staff, can be readily ventilated on the floor of the House of Commons. Ministers, jealous for the good reputation of their department, exercise every possible means to secure the efficiency of the service and to meet the demands of the staff.

Had it not been for the opposition of the Treasury, the Post Office would have embarked in the telephone business in a "wide and comprehensive manner" in 1880.

In 1891 the master patents owned by the National Telephone Company lapsed, and the Post Office then decided to purchase the trunk lines, leaving the local areas to be served by the original companies. The State took over the whole of the company's system on December 31st, 1911. Up to March 31st, 1911, £11,130,327 of public money had been invested, and at the time of writing the National Telephone Company claim some £20,000,000 for the plant, etc., handed over to the Government.

When the State took over the telegraph service in 1868, they little thought there would be a deficit in future years of £1,000,000 per annum. Unless great caution is exercised in the fixing of telephone rates, their losses may be largely increased, and new taxation will be required. With the growing demand for public ownership and public control of monopolies, new methods will need to be adopted in the House of Commons, by which the grievances of the staff can be considered and the interests of the taxpayer may be safeguarded. The difficulty of raising or re-

adjusting rates is a real one, as users of the telephones will organise and make their influence felt in a stronger degree than the general public. Any politically powerful section of the public is a very real danger to a political party—no matter what its complexion may be. If it were not so, would the Post Office, under successive Postmaster Generals, have been content to suffer the large and growing loss on the telegraph service? It must be admitted that fear of public unpopularity has prevented these losses being wiped out. The danger which I foresee in government ownership of the telephones is precisely what has happened in regard to the telegraph, that pressure will be exercised through the House of Commons to lower rates below a remunerative level.

Literary Digest. 44: 153-4. January 27, 1912.

Government Telephone in England.

The London *Morning Post* says:

The change [January 1, 1912] means that capital amounting to over £16,000,000, and 18,000 employees are transferred to the state—that, in short, the nationalization of the telephone service is an accomplished fact. Of these additional civil servants at least 12,000 will have the right to pensions under the Post Office. The staff has not been transferred in its entirety. Certain members, such as the solicitor, the secretary, the general superintendent, the chief engineer, the assistant engineer, and six provincial superintendents, will not come under the Government. The highly paid officials will receive compensation from the company's fund established for that purpose.

An idea of the extent of the service taken over by the State may be gathered from the following statistics: There are over 400,000 subscribers, 1,571 exchanges, 500,000 exchange stations, and 36,000 private stations. Before the transfer the Post Office controlled about 500,000 miles of telephone wire with 120,000 subscribers. By the change it will control 1,253,890 miles. The additional mileage brings the capital value of the system owned and worked by the State up to £25,000,000. The change, so smoothly accomplished, is the result of a decision in Parliament in 1905. The old company worked under a license from the Government granted over thirty years ago. It was resolved that the license should not be renewed, and that on its expiration the telephone service should be conducted by the State.

Public Ownership of Telephones on the Continent of Europe.
pp. 396-7.

Arthur Norman Holcombe.

One of the first considerations in regard to a telephone system from the point of view of the subscriber is the price of service. Hence, after reviewing the development of the leading telephone systems on the continent of Europe, the temptation is strong to compare the rates which are actually in effect in the various countries with a view to ascertaining which enjoys the cheapest service. The undertaking presents many difficulties.

In local exchange service, the annual subscription paid by the subscriber does not necessarily indicate the actual expenses which he is called upon to bear. It is necessary to know not only what additional payments he is required to make, such as contribution towards the cost of construction, or charges on account of maintenance of his line and the installation of his telephone instrument, but also what services he is entitled to receive in return. Finally, it is necessary to know what standard of service is maintained. A bad service is dear at any price. But a high price does not always denote a good service. Under similar conditions, if rates are reasonable, a low rate denotes a low standard of service and a high rate a high standard of service. But the expense of maintaining a given standard of service varies from country to country on account of differences in the cost of materials and especially in the cost of labor. Furthermore, the powers of telephone managements with regard to the use of rights of way over private and public property vary greatly from country to country. In some, rights of way are free, in others they are costly. Hence, a comparison of the prices even for precisely identical services, affords no certain indication of their relative reasonablenesss.

Moreover, even if the conditions and standards of service were directly comparable, and the expenses of construction and maintenance identical in two different countries, it would not follow that any difference in the rates that might exist for an equivalent service would measure the extent to which the higher rate was unreasonable. For both rates might be unreasonable, one unreasonably high and the other unreasonably low, or even both might be unreasonably high or low. . . . Governmental tele-

phones are unreasonably low which enables telephone users to shift a portion of the cost of service to the shoulders of the general tax payers.

These difficulties make it practically impossible so to compare telephone exchange rates in different countries directly with one another as to reach any valuable conclusions concerning their reasonableness or unreasonableness. The preliminary allowances which must be made are too subtle, and the evidence on the basis of which such allowances must be calculated is not available in sufficiently accurate form.

Social Welfare in New Zealand. p. 210.

Hugh H. Lusk.

The establishment of public telephone service is, of course, more recent than that of the telegraph in New Zealand, as elsewhere, but even in the comparatively few years of its existence it has made progress to an extent not exceeded by any other community in proportion to its population, while it is far in advance of most. In the year 1910 there were thirty-three telephone centres in the country, and a hundred and twenty-five sub-exchanges, while the number of private connections in the country in that year considerably exceeded thirty thousand, and were apparently increasing at the rate of fully three thousand in each year. The expense of these private telephone connections is a little less than \$15 per annum. At this rate the service is fully self supporting, the revenue derived from it last year being fully \$700,000—(about a hundred and forty six thousand pounds)—and leaving a margin, after providing all expenses of operation, up-keep, and interest on the capital invested.

AFFIRMATIVE DISCUSSION

Congressional Record. December 22, 1913 [current file].

Government Ownership of the Telegraph and Telephone.

David John Lewis.

What is the relation of the public and the Post Office to the telegraph and the telephone, those great agencies of communication between the people, which now equal, if they do not eclipse, the postal system in the taxes levied upon national communication?

Do they differ from the Post Office in the function they perform; and if not, how do they differ from industrial activities consigned by general consent to private control? Is there something in their nature which distinguishes them from the farm and the retail store, some difference which reaches the dignity of a principle of classification, assigning one to the domain of postal action, while leaving farm and store to the field of competitive control?

Society has never governed itself well by utilizing merely a single truth or principle, whether it be laissez faire, unqualified individualism, socialism, or communism; it possesses aspirations and appropriate organic attributes and powers which it is its duty to utilize to promote its welfare. Now, what does it say on the subject before us, first as to the natural division defining those activities which should, and those which should not, on economic and social grounds, be assigned to the control of the individual? I quote from the work of Prof. Adams, "The State and its Relation to Industrial Action":*

Classes of Industry

All industries fall into three classes, according to the relation that exists between the increment of product which results from a given increment of capital or labor. These may be termed industries of constant returns, industries of diminishing returns, and industries of increasing returns. The first two classes of industries are adequately controlled by competitive action; the third class, on the other hand, requires the superior control of State power.

* Adams, H. C. Relation of the State to Industrial Action. [Out of print.]

Third Class—Increasing Returns

The important thought in this connection is that where the law of increasing returns works with any degree of intensity the principle of free competition is powerless to exercise a healthy regulating influence. This is true, because it is easier for an established business to extend its facilities for satisfactorily meeting a new demand than for a new industry to spring into competitive existence. If this analysis of industries be accepted as correct, there can be no question as to the line which marks the duties of the State. The control of the State over industries should be coextensive with the application of the law of increasing returns in industries.

There are many other lines of business which conform to the principle of increasing returns, and for that reason come under the rule of centralized control. Such businesses are by nature monopolies. We certainly deceive ourselves in believing that competition can secure for the public fair treatment in such cases or that laws compelling competition can ever be enforced. If it is for the interest of men to combine, no law can make them compete. For all industries, therefore, which conform to the principle of increasing returns, the only question at issue is whether society shall support an irresponsible extra-legal monopoly or a monopoly established by law and managed in the interest of the public. In this latter way may the benefits of organization in the form of monopoly be secured to the people, and in no other.

Thus where we have the law of increasing returns as a cause we have monopoly as a result. How shall that monopoly be rendered of the greatest service to society? Well, that, it is said, is a question of motive in financing:

Private financing: The relations here set forth will present themselves more clearly to our minds if we throw into comparison the rule of public and the rule of private financing. A private business is managed to secure a profit, and, other things being equal, the higher the price secured for any service rendered, the higher will be the profit.

Public financing: The rule of public financing, on the other hand, conforms to an altogether different principle. It is the purpose of government to render services at the lowest price consistent with efficient service. Price equals cost. This is true, because the State, being the manager of the business, has no motive in acquiring riches.

The public-service motive: In institutions, as with individuals, motive is everything. The motive to serve one's self is the common motive, and to impose sufficient restraint upon its operation, when unsocial, is, stated in a broad way, the principal object of government.

Where public needs and social considerations become the principal and dominating purpose, where imperative public service is the object, the world naturally has not yet found the restricted private motive adequate to the work.

But what is an industrial monopoly? The answer of the economist is: "An industrial monopoly may be defined as a business superior to the regulating control of competition."

The policy of restricting public powers within the narrowest possible limits tends to render government weak and inefficient, and a weak government placed in the midst of a society controlled by the commercial spirit will quickly become a corrupt government; this in its turn reacts upon commercial society by encouraging private corporations to adopt bold measures for gaining control of government machinery. Thus the doctrine of laissez faire overreaches itself; for the application of the rule which it lays down—

Major premise: All human interests are the same.

Minor premise: Each man knows his own interest, and if left to himself, will follow it.

Conclusion: The best possible form of social relations will emerge from the unrestricted play of industrial freedom—

. . . will absolutely destroy that harmony between public and private duties essential to the best results in either domain of action.

Every important country of the world—England wholly, as to the telephone only but recently—has long adopted these views. I insert later a list of them which finds the United States looking very solitary, with only Spain for respectable company.

THE TELEGRAPH

In New Zealand the telegraph system is under the principle of public financing and conducted by the Post Office. Since price levels there generally, as well as social and educational conditions, resemble those of the United States, it will be permissible to compare the service there with our own. As against the minimum rate under private financing of 25 cents in the United States, the New Zealand minimum rate is 12 cents. This illustrates the normal functioning of the telegraph monopoly as publicly and privately financed, for both rates are equally normal in relation to their facts of ownership. By which it is meant to say that if the private financier should discover that only the lowest rates would produce the maximum of profit, and the public financier that only the highest rates would insure the most extensive public service, we should immediately have the New Zealand rate in the United States and the American rate in New Zealand. [See Table 1.]

TABLE 1

Country.	Rate.	Number messages for 100 population.
New Zealand	\$0.12	809
United States	\$0.25 to \$1.00	110

Thus, under what appears to be similar price and wage levels and social and industrial conditions, we have a telegraph institution under the rule of public financing yielding about eight times the social service attained by private financing.

[Table 2 gives the number of telegrams per capita, all countries, of letters per capita, and the minimum rates per telegram.]

It appears that we rank second in postal rates and first in utilization, while we rank seventeenth in the telegraph rate charged and ninth in resulting social service.

Adequacy of Organization

I present now the elements or factors laid down by the political economists as necessary in the working organization of a monopoly in order that its service be rendered at the lowest cost, and that society should realize the benefits of a monopoly in the class of enterprises for which that form of capital and labor is economically and socially adapted. The elements are stated to be:

- (a) Unity and exclusiveness of organization.
- (b) Details of management well worked out.
- (c) Facility for extension by mere duplication of existing structure.
- (d) A social demand for the service which is widespread and constant.
- (e) Adequate ability in authority.

Results :

- (f) Service at less cost than if broken into groups, because
- (g) Assured demands for service admits of closest calculations.
- (h) Extent of demand admits of most minute division of labor.
- (i) Absence of rivalry reduces to a minimum the amount of capital and other expenditures necessary for the performance of the service.
- (j) Speculative management is eliminated;

(k) And thus, with public financing motives,

(l) The maximum of cheapness and efficiency is rendered possible.

It is, of course, not a matter of criticism that the telegraph monopoly is lacking in a main essential—the public-service motive. As a privately financed organization, such a motive is against nature and should not be asked.

It is only by the employment of these factors that the highest utilization of the monopolistic institution can be attained.

(a) Unity and exclusiveness of organization: That this is a primary essential is almost a truism, admitted on all sides. The Bell Co. frankly justifies its war of capture or destruction of its rivals on this ground, declaring recently:

We believe that the highest commercial value—

In which they mean to include the element of public service—

can only be attained by one system under one common control, and that it can not be given by independent systems unless they are controlled by agreements in effect making them a single system—and that is what the Bell system is.

We believe that the public would in this way get all the advantages and avoid all the manifest disadvantages of public ownership.

In treating this challenge “public ownership” shall be taken as equivalent to postal control and administration of telephone and telegraph communication; and, not to be unfair, the principle of private financing shall be treated as equivalent to the Bell Co.’s own administration of its telegraph and telephone properties.

The postal system gives nondiscriminating service rates as low as any in the world:

(a) The 1 and 2 cent letter rates, good to all our possessions, to Canada, Great Britain, and Germany, and to the farms of the country.

(b) The cent a pound, or 2 (2.38) mills per mail piece, for educational publications consisting of the magazine, the periodical, and newspaper of the country.

(c) The parcel post, extending to the farm with rates as low as 5 cents, against the 25 cents hitherto charged by the privately financed express service.

Besides these, it dispatches money and pays interest on de-

posits, insured by the indubitable security of the Nation, and performs other services. All these services it renders as cheaply as any other postal system, stated in terms of money (except Japan), and in terms of price levels performs them, along with Canada, for the lowest payments in the world. These are some of the advantages of public or postal financing. And we ask no consideration in this comparison for the higher wages of the postal employee of the United States or of the higher price levels here, nor for the fact that railway mail transportation is paid for here, which is commonly not the case elsewhere.

The disadvantages would probably be alleged as:

(a) Postal deficits of the past.

(b) Alleged unsatisfactory political phases in relation to postal personnel.

With regard to the postal deficits, they assuredly represent only a small part of the amount of social service rendered under statutory public policies for which the public is not directly called upon to pay. The franking privilege (1.85 per cent of the total postal service), the carriage and handling of second-class matter for educational purposes constitutes 29.24 per cent, carried at about one-seventh its proportional cost; these are the items which take the form of a "deficit," only because the department has no "public-service" statement showing the amount and value of service rendered, like a railway does. If such a table were presented there would be no deficit, but a surplus of very many millions, quite as many millions as the telegraphs and telephones show as the profits of their private financing. This very clearly appears when we charge to the franked matter and the second-class educational mail pieces the rates charged on other postal matter. Thus only 5.19 per cent of postal revenues are derived from the 29.24 per cent of the total postal services devoted to such second-class matter, and no revenues from the 1.85 per cent of such service given to franked and penalty matter.

It can be readily seen, therefore, that 25.90 per cent of the postal service goes unaudited, and that a correct statement of its services would credit its receipts with that additional amount. In that event the department would have shown a surplus at all times since the war, and in 1912 a surplus of more than \$60,000,000.

The classification of the postal deficit as a "disadvantage" fails, moreover, to comprehend the distinction between private and public financing. The test of success in the former is the degree of profit it brings the private investor; in the latter the test is the degree of social service rendered. Had the parcels post business been in its hands the department would have shown no deficit, but surpluses in much the greater number of years. The initiatory experience of the very limited service we now enjoy shows that even with the most substantial reductions in the rates the service is highly profitable to the department.

The postal personnel: Is the postal employee inefficient? Let us see what it is he does. Obviously, in the main, it is to handle the mail piece. How well does he perform this work? Here is the record for 27 years.

[Table 3 gives, 1886 to 1912, the number of postal employees, the yearly number of pieces of mail handled, and the average number per employee.]

During the years of that record city and rural delivery have been added, virtually doubling the quality of the service. And not only has the quality nearly doubled, the cost of service, as we see, has been reduced for each piece. Can any telegraph or telephone company—yes, can any public-service corporation enter the lists on this showing of advancing efficiency and progress?

At this point it may be interesting to compare our postal accomplishment with that of other nations. At the same time tables showing our telegraphic-service performances are introduced for comparison with accomplishments in these services by the postal systems of other countries.

[Table 4 compares the relative number of pieces of mail handled by postal employees in the United States as against those of other countries.]

From Table 4 it appears that Belgium is first and the United States second in postal efficiency among all the nations of the world. And if Belgium were not composed virtually of one large city with suburban surroundings I think we should really rank first.

[Table 5 compares the number of telegrams per employee and per office for the United States and other countries.]

With three times the traffic density per office the telegraph

companies of the United States still do not take first place in product per employee. The reason for this will appear a little later. Here attention is called to the gross amount of idle plant implied in the small number of telegrams per average day—not more than 10 messages per day. This compares with 193, the average mail pieces per day for the average postal employee, with its collection, 620 miles of railway transportation, distributions, and deliveries over the city and rural routes.

If the inefficiency of our telegraph networks, as conducted in the United States, is plain, while our postal agency and competitive industries show, at least, more than the average efficiency, it may be that the particular causes of such inefficiency can be identified and brought to light.

Recurring now to the elements of organization essential to the highest utilization of a monopoly for social purposes we can dispose of the first, "unity and exclusiveness," by the mere statement that there are some 25 telegraph companies doing commercial business, and that two of them duplicate their agencies in more than half of the country. The next element, "efficiency in details of management," will require more elaborate discussion.

The public is familiar with the high state of simplicity attained in postal administration, especially in dealing with the mail piece and safeguarding the revenues. I have had experienced telegraphers outline the processes and acts of attention devoted to the telegram under private administration of these agencies. [Enumerates mechanical details.]

Here, then, are 27 acts or processes, for 16 of which an argument of elimination might well be made with the introduction of the stamp and other simplified postal methods.

But whatever may be thought of the susceptibility to elimination of half of the above items, it is believed that the following, some 52 in number, all accounting processes, would give way under public management to the prepaid or postage-due stamp. We find it safe to intrust nearly three hundred millions of postal revenue to such stamps now. [Enumerates mechanical details.]

It is exactly accurate to say that merely affixing the stamp to the letter replaces these 47 accounting processes with the individual telegram under postal practice. That is, the postal system realizes the first great canon of a publicly financed

monopoly. Its "details of management have been well worked out."

We shall see later that the cost per message should decrease with the increase of the traffic, as shown with the mail piece, and another element of economy thus be added.

To the foregoing wastes should be added nearly the entire expenditure of the rival company where its lines and offices duplicate another like service. To speak to the very point itself, the expenditures and capital costs of either the Bell or the Mackay telegraph companies, where their lines serve the same territory, could be almost wholly eliminated, since either system is probably adequate to handle all the traffic at the duplicated points.

Inadequacy of Extension

It has been suggested that substantially the entire capital and current expenditures of the rival telegraph company is wasted with reference to competitive territory. The antonym of this condition is the absence of any telegraphic service at points which are unattractive to private finance. There are 64,022 post offices and branches in the United States and but 6,828 (1907) offices maintained by the telegraph companies themselves, although they treat some 22,282 railway-signal stations as telegraph offices. Converting the railway telegraph into phone signalling is reducing this rather doubtful claim for proper geographical distribution of the telegraph service, where, with the railway business having necessary precedence and amounting to double that of the commercial companies, the citizen's message, even where service was given, came as a third and last attention. These telegraph offices are maintained by the railways at their own expense and for their own purposes, and would be quite as available for the postal administration as they are now to the telegraph companies. They can hardly be claimed as belonging to the service rendered by the telegraph companies proper. And while we are on the subject of giving the public the "advantages of public ownership, without the manifest disadvantages," a comparison of the service rendered under postal administration elsewhere and private financing here may be of interest.

[Table 6 gives the relative proportion of telegraph offices to post offices.]

Two telegraph offices to three post offices, at least, elsewhere, but one to over seven here.

Stated in another way, the commercial telegraph companies maintain less than one (0.8) office for 10,000 of population in the United States, while their rate averages 36 cents per message as against 16 cents in New Zealand, which maintains over 18 (18.51) telegraph offices to each 10,000 of its population. Why, sir, the nearest county seat to this Capital, with 1,500 population, is without a telegraph office. Such a statement can not be made of the postal system. When this is considered in connection with the fact that New Zealand gets a working efficiency of 3,713 telegrams per employee per annum out of its personnel—telegraph—and the American companies but 3,487, it is not difficult to see how far the private financier falls short of realizing that higher efficiency which economists declare feasible in properly financed monopolies.

The most serious exaggeration of the high cost of service per message in Western Union finance remains to be stated. It is the factor inseparable from the financing of a private price-making monopoly. I refer to the necessarily low or inferior plant utilization practicable, when measured in terms of units of service attained, where the rates are made with a view solely to the object of maximum profit. That they are so made by our telegraph systems we have already seen. Now, the effect of raising the price of any commodity or service is to correspondingly diminish the effective demand for it, and this principle is well exemplified for the telegraph service in an experience which I shall take the time to relate. The following statement is taken from page 26 of "Investigation of Western Union and Postal Telegraph Cable Cos." by the Bureau of Labor:

In this connection it is interesting to cite the case of the Chicago & Milwaukee Telegraph Co., which was organized in 1878. It began by charging a 10-cent rate for 10 words and 1 cent for each additional word between Chicago and Milwaukee. It does principally a board of trade business, having its office in the board of trade building in Chicago. In 1878 the Western Union cut the rate to 5 cents for 10 words, or one-half cent a word for all words between these points. The Chicago & Milwaukee Co. met the cut so far as quotations were concerned, but kept up its 10-cent rate on orders, and this rate continued for several years to board of trade

members. Finally, in 1904, the Western Union raised the rate to 25 cents for all except members of the board of trade, to whom a 15-cent rate still obtains, and the smaller company raised its rate to 15 cents for 10 words and 1 cent for each additional word to all except board of trade members, to whom it gave a 10-cent rate. Later it made a 15-cent rate to all. It does not deliver messages except by telephone, and will not accept a message for delivery to other than board of trade members, unless the delivery can be made by telephone.

The company reports handling an average of 354 messages a day, at an average charge of $17\frac{1}{2}$ cents per message, on a rate of 15 cents for 10 words and 1 cent for each additional word. This Chicago and Milwaukee rate is perhaps the only survival of the low rates which were wiped out by the understanding between the Western Union and the Postal Telegraph Companies.

The sequel of this episode is that the Bell system at length secured control of the Chicago & Milwaukee Telegraph Co. and substituted the well-known Western Union rate. I have a statement of the business done under the 15-cent rate and under the 25-cent rate:

1909. Messages at 15-cent rate.....	103,248
1912. Messages at 25-cent rate.....	57,689
1913. Messages at 25-cent rate, six months, January to June 30.....	22,018

That is, a two-thirds increase in the rate has resulted in a reduction of the traffic of about one-half, and this is, of course, according to the principles laid down. The motive of the increase in the rate for those making it was, however, that they secured about as much revenue for half the messages as they did for the normal number of messages.

Finally we have the competition of the Bell telegraph and the Mackay or Postal Co. The former has 220,938 miles of pole line and the latter 66,154 miles. The Postal Telegraph Co. has its complementary offices maintained by itself or numerous constituent companies. Nearly all of these are stationed at points where the Western Union maintains like offices. There is a profit for both companies, although at 50,000 points where they have no offices, but which their wires mostly pass, the Postal Department maintains its offices without profit. Here is a fundamental defect which private financing can not overcome.

Need it be suggested that the Postal Department at all these 50,000 points has its agencies established and that where the wires are in the neighborhood to be connected with its existing

offices no additional expense would be incurred to furnish these services to that large portion of the public now denied them? But I need not detail the complete adaptability of the postal system to readily absorb this secondary form of communication, in nearly all instances, without any of the costs which now attend telegraphy except for maintenance and the wages of its operators, linemen, messengers, and necessary technical engineers.

It is evident that our private exploitation of the telegraph agencies of communication fails to gratify the laws of either administrative or social efficiency. Their rates are the highest, their services the lowest, and their product per unit of economic energy employed among the lowest in the world. And all these failures are according to the laws laid down by the political economists of our time.

THE TELEPHONE

So far I have placed under survey the telegraph agencies in relation to the postal systems of the principal countries of the world. My next duty is to apply the same standards of economic science to the telephone.

Efficiency of Telephone Monopoly

The canons of efficiency are the same for the telephone and telegraph:

(a) The social test: What is the degree of service rendered to the public?

(b) The economic: What does it cost the public?

(c) The publicist: What are the social influences?

How do these compare under private and postal financing?

The telephone service subdivides itself into, first, the local and, second, the toll and long distance, and the statistics for each of these is twofold in character; that is to say, there are the varying rates fixed in the contracts corresponding, differing in the different cities and towns of the country, by which the patron secures a limited or an unlimited local service, or a measured, or a one or more party line service, or by which for toll or long-distance conversations the rate is graduated into day and night distinctions.

[Table 7 compares letter and local telephone rates in the United States and other countries.]

Thus we rank but fourteenth on the phone charge and are 1 of 3 out of 16 countries in which the local rate exceeds the letter rate. It will not do to say that our letter rate is too low or does not pay. It yields, in fact, a profit of just one-third. The local and other telephone rates given for the United States are those of the Bell system for 1912, embracing about two-thirds of the entire traffic. Our mutuals and the independents give a much lower rate, according to the statistics of 1907, which embrace all companies. The Bell system in that year secured about twice the rate for its service which was collected by the independents, presumably a local service as good as the Bell's.

Let us review this 1907 American experience:

TABLE 8
AVERAGE RATE AND OPERATING EXPENSE PER MESSAGE

	Rate.	Equals rate per year.	Operating expense.
Mutuals.....	\$0.0047	\$ 5.35	\$ 0.0039
Independents.....	.0114	18.50	.0062
Bell system.....	.0211	42.35	.0148

The above table includes local, toll, and long distance for the independents and the Bell, whose statistics, taken from the census and the Bell report for 1907, were as follows:

	Receipts.	Expenses.	Number of messages.
Bell.....	\$128,556,506	\$87,908,000	5,977,000,000
Independents.....	55,227,531	29,782,964	4,829,547,057

The Bell data are taken from its own report, while the independents are taken from the census by deducting the Bell figures. The item of Bell receipts represents an estimate of \$7,803,306 for its long-distance receipts, being double the amount of the item "Net \$3,901,653 from telephone traffic." The item for maintenance and depreciation, \$34,665,700, in the Bell account largely represents an element of undistributed profits which have been turned into new construction or purchase of other companies, the whole of this element for a series of years representing, according to the report of 1912, the sum of \$165,000,000. This item probably largely accounts for the alleged much higher operating expense per phone of the Bell system.

I have now to present, comparatively, the toll rate as statistically ascertained for the different countries. Except in the

United States and where otherwise stated, the service is postally conducted.

TABLE 10
AVERAGE CHARGE, INTERURBAN (TOLL) AND LONG-DISTANCE

Country.	Rate.
Luxemburg.....	\$0.030
Germany.....	.036
Switzerland.....	.074
Sweden.....	.079
France.....	.090
Japan.....	.100
Norway.....	.100
Great Britain.....	.120
Netherlands.....	.130
Italy.....	.190
United States (Bell Co.).....	.190
Denmark.....	.230
Belgium.....	.230
Hungary.....	.260
Austria.....	.280

It will be observed that under the Bell system the United States, among 15 countries, takes the eleventh place. But this table may be unjust to the other countries, and especially to Denmark, Belgium, Hungary, and Austria. Their interurban statistical rate includes the receipts from their whole long-distance service, while it can not be certainly determined whether the interurban for the Bell includes their "long-distance" receipts, properly speaking. To make the comparison certain, in this respect, it will be necessary to compare the tariffs of the different countries for their long-distance service.

TABLE 11
LONG-DISTANCE TARIFFS

Country.	100 miles.	300 miles.	500 miles.	700 miles.
(a) Sweden.....	\$0.08	(a) \$0.13	(a) \$0.20	(a) \$0.34
(b) Norway.....	.09	(k) .24	(k) .36	(m) .38
(c) France.....	.10	(b) .34	(m) .38	(k) .48
(d) Italy.....	.19	(c) .35	(n) .38	(e) .58
(e) Belgium.....	.19	(m) .38	(e) .53	(g) 1.25
(f) Denmark.....	.20	(n) .38	(h) .60	(l) 1.26
(g) Japan.....	.20	(d) .38	(g) .82	.....
(h) New Zealand.....	.24	(f) .40	(o) 1.50	.....
(i) Great Britain.....	.24	(g) .50	.....	.....
(k) Germany.....	.24	(o) .62	.....	.....
(l) Australia.....	.32	(h) .72	.....	.....
(m) Austria.....	.38	(l) .80	.....	.....
(n) Hungary.....	.38	(i) .84	.....	.....
(o) Russia.....	.38	.....	.....	.....
(p) United States (Bell Co.).....	.60	(p) 1.80	(p) 3.00	(p) 4.20

NOTE.—The letters preceding the name of each country are used to identify the countries to which the rates given for 300, 500 and 700 miles belong.

Thus the Bell system gives the United States the fifteenth and last place in the scale of efficiency with respect to long-distance charges. This is a most serious circumstance for us economically and socially, in view of the American scale of distances, as may be seen in our average freight haul, which is ten times that of Great Britain, and from four to five times as long as in the other countries. The Bell Telephone has an even rate of 6 mills a mile for a three-minute conversation; and a thousand miles therefore commands a Bell charge of \$6 per talk. This happens to be about the same rate (7.53 mills) the railways secure for hauling a ton of freight a mile. But the railways do not make their charge arithmetically progressive. If they were to do so their rate on the longer distances would be so high as to sweep such traffic from the rails. What they do in fact, although not in theory, is to double the charge as the distance quadruples, thus the charge for 25 miles might be 10 cents per 100 pounds, first class; the rate for 100 miles would be 20 cents; for 400 miles, 40 cents; for 900 miles, 60 cents; the rate increasing not arithmetically but according to the square root of the number of miles. Thus if the charge for a phone call were placed at 10 cents for 25 miles, on the square-root formula it would increase to 20 cents for 100 miles, 40 cents for 400 miles, 50 cents for 625 miles. In fact, such a rate would slightly exceed the long-distance rates on the continent.

[Table 12 gives continental rates for long distance, compared with square-root formula.]

It will be urged, of course, that prices are higher here; but they are not higher here, they are higher in Europe on the copper and poles, which mainly enter into the capital cost of a long-distance line; higher by the price of the transportation of such material from this country to the Continent. It may cost more to conduct such a line here in the expense of personnel, but the difference could hardly be more than 10 per cent of the continental rate. It is true, however, that a special charge is made abroad for an urgency, or preferential, use of the line, but its payment secures one the preference, while with the Bell system the day charge is all the same and one has to wait his turn despite the rate. The truth is that no attempt is made to justify the Bell rates on the ground of social efficiency. This is frankly declared by the present managers of the Western

Union and Bell telephone system. I quote from the report of the Bell system for 1911:

Instantaneous and immediate transmission of communications is as yet a convenience or luxury, although under modern methods of business and commerce it is an economical alternative to the cheaper mail service in business operations. The use of the telegraph may be a popular convenience, but it is not a necessity and is still confined to the comparatively few, and for that reason should be at the cost of the few that find benefit and profit in that use.

This is bold language. We are virtually told that of the three great agencies of communication only one, the letter post, may be used by the people, and that the other two, the phone and the telegraph, are conveniences or luxuries, not popular necessities, and for that reason should be at the cost of the few, i. e., of the rich, to which class largely the present rates confine the service. But this is not a justification. It is a confession. These tariffs are the scandal of public-service rates the world over and are endured because the service is known only to those in easy circumstances, who overlook the rates in the glamour of the marvelous character of the process of communication.

The Tariffs

The statistical charges give but a very deficient conception of the situation as to actual telephone tariffs. While there are many points at which a phone may be rented on the basis of yearly tariffs of \$24 for business and \$18 for residence service, at such points the number of subscribers is relatively low; and as a matter of fact, with the Bell system at least, the rule of 5 cents a call comes more nearly expressing the rate available to the public. This is seen in the following examples allocated according to the density of the different centers of population. [See Table 13, page 57.]

Comparisons based on the flat or unlimited service rate do not adequately present the field of traffic. While, except in small towns and for the residence service, the flat-rate business works out the lowest average charge per call, it does not reflect the degree to which a popular use of the service may be had. To measure these possibilities we must go to the limited or measured

TABLE 13

TABLE GIVING ANNUAL TARIFFS, FLAT-RATE SERVICE, FOR LEADING CITIES OF DIFFERENT COUNTRIES

Christiania.....	\$ 21.44
Stockholm.....	24.44
The Hague.....	26.00
Copenhagen.....	32.00
Tokyo.....	34.00
Auckland, New Zealand.....	34.09
New Haven.....	84.00
Cincinnati.....	100.00
Oakland, Cal.....	84.00
Philadelphia.....	¹ 90.00
Chicago ²	¹ 84.00
Denver.....	138.00
Amsterdam.....	36.00
Rotterdam.....	36.00
Berlin.....	43.20
Budapest.....	57.90
Paris.....	77.20
London.....	82.79
Boston.....	125.00
Seattle.....	90.00
Washington.....	168.00
Baltimore ³	174.00
San Francisco.....	180.00
New York ³	228.00

American average exceeds foreign average 300 per cent.

¹ Competition.

² Recently this rate raised to \$125; competition presumably removed.

³ Baltimore and New York limited to 5,400 and 5,700 calls.

service rates, under which the user is asked to pay in accordance to the number of calls. This comparison can not be made as simple as for the flat-rate tariffs without circumscribing, which I shall do by taking selected numbers of rates as, for example, the cost per call of the first 2,000, 5,000, and 10,000 calls for one-party business lines.

[Table 14 gives a comparison of rates per call for measured service in principal cities of the world.]

A rival of the Bell system gives the following table of comparative rates before, during and after competition, presumably flat rates:

[Table 15 compares Bell rates, American cities, before, during, and after competition, presumably flat rates.]

Postal telephone rates, like mail rates, are uniform for similar services. The following table of the same rival gives the rates of the Bell system for some 60 cities, graded from the highest to the lowest populations.

[Table 16 gives the rates in various American cities, arranged in order of population.]

The effect of these abnormal distance rates upon the utilization of the service may readily be seen. The number of inter-urban conversations per phone in the different countries is as follows

TABLE 17
LONG-DISTANCE CONVERSATIONS PER PHONE

Country.	Number of conversations.	Rank.
Denmark.....	761	1
Netherlands.....	634	2
Denmark (private).....	348	3
Germany.....	301	4
Sweden.....	150	5
Russia.....	142	6
Norway.....	135	7
Switzerland.....	130	8
France.....	125	9
Norway (private).....	109	10
Italy (private).....	73	11
Japan.....	69	12
Italy.....	62	13
United States (1912, Bell).....	48	14-
Belgium.....	44	15
Austria.....	37	16
Hungary.....	34	17

It is apparent, of course, that telephone rates fail to satisfy the law of social efficiency and the pronouncement just quoted from the Bell Co. far from making apology disavows any concern or obligation in that respect.

Administrative Efficiency

Let us look now into the question of the operative efficiency of the privately financed telephone as compared with its public and postal management in other countries.

[Table 18 gives telephone operative efficiency, United States and other countries.]

In the column for phone efficiency the long-distance or inter-urban call is included and rated as equal to four local calls in its demands upon the personnel. The column for postal efficiency is inserted to show the performance of the postal personnel. For this purpose the postal-service unit is treated as the average mail piece and the telegram as equal in service to 10 mail pieces,

while the local call is rated as equal to one-half mail piece, or unit, and the interurban as equal to two mail pieces. All kinds of employees of the telephone and post are included in the statement.

Now, what is the cause of this disparity? My explanation is that it is the deterrent influence of high rates on the amount of the traffic and consequent plant utilization. Obviously the amount of traffic will depend on the rate. If it should cost me but a cent a call, I will use the phone freely; if it cost me a nickel, I should probably restrict my calls. So, too, not only may the message rate be so high as to discourage the use of the phone, but the rate for phone subscription may do so. In short, to a vast majority of the people the degree of utilization depends on the cost.

We reach the same conclusion for the telephone that we had reached for the telegraph. Private financing fails to secure either the maximum of social service or the maximum of plant utilization.

It is, of course, not a matter of criticism that the telephone monopoly is lacking in a main essential—the public-service motive. In a privately financed organization such a motive is against nature and should not be asked.

The perfection of unity and of exclusiveness—except as to the express service—is, of course, found in the postal organization.

General Conclusions

It appears that despite our high price and wage levels in the United States we take first place as to postal rates. Among 16 countries we take but fifteenth place as to telegraph rates; among 15 countries, but tenth place as to interurban telephone rates; among 12 countries, only the eleventh place on local telephone charges; and among 11 countries we take the eleventh, or last place on long-distance telephone charges.

Our postal service, publicly financed, in spite of our high price levels, is giving rates the lowest prevalent in the world, and possesses the very highest working efficiency; while the telegraph and telephone monopolies, like the express companies,

subjected unnaturally to the rule of private financing—rank among the very lowest in working efficiency and among the highest in the rates exacted from the public.

I think it apparent that the doctrine of laissez-faire is clearly inapplicable to the telegraph and the telephone; i. e., that these public agencies of communication do not belong legitimately to the field of the rule of private financing.

We have violated the laws of economic science in giving to the functionaries of private finance those things which were not theirs. There is a law of private finance; there is a law of public finance. Each has its subjects upon which, properly confined, each will normally operate for the maximum of human service. We have ignored, or rather misapplied, one of these laws by giving over to the private financier a postal duty.

Competition

Mr. Speaker, with regard to this method as a corrective agency, I cannot do better than quote from the work of Prof. Holcombe, one of the Harvard Economic Studies, entitled "Public Ownership of Telephones on the Continent of Europe." After stating the theory of competition in relation to prices generally, he speaks of the telephone service:

Since the policy of free competition offers no adequate assurance of reasonable rates for telephone service, the question at once arises, How shall they be determined? The only alternative to competition is monopoly of some sort. The forces of demand and supply will operate under a régime of monopoly, as under one of free competition, but the results will not be the same. In the latter case the interests of the monopolist will ordinarily lead him to fix his rates at a level which is intended to yield him the maximum of profit. Having adopted a tentative schedule of rates, he carefully observes the extent of the demand for his services at those rates and readjusts them, if need be, until the actual sale of his services verifies his calculations. His purpose always is to make as large as possible the surplus that remains after deducting from his gross receipts all the expenses of rendering the service. Consequently, under a régime of unregulated private monopoly rates are certain to be exorbitant.

In the telephone business, to this disadvantage, from the viewpoint of the community of monopolies in general, must be added a further special disadvantage. Not only is there no protection against exorbitant rates, but also there is no security that the distribution of the total charges between the different classes of telephone users will be made on a basis calculated to promote the widest utility of the service, such as it is.

Regulation

There are many things to be predicated of regulation, of course, and I shall make no attempt to cover them all. Among them, however, are some effects that are certain. A régime of regulation will—

- (a) Eliminate competition.
- (b) Strongly tend to crystallize the rates and, with them, local discriminations.
- (c) Remove personal discriminations.
- (d) Limit extension to places of sufficiently high profit to attract private finance.
- (e) Thus defeat the attainment of the maximum extension of social service.

The three first propositions are exemplified in our railway history of the last 10 years and in that of England for 20 years.

Efficacy has never been claimed for regulation as a method for obtaining the maximum social service. Take the case of the Bell Co. controlling the Chicago & Milwaukee Telegraph Co., which raised its rates per telegram from 15 to 25 cents, abridging its former social service nearly 50 per cent. Contrast this with the British Post Office in 1885 reducing its rate from 24 cents to 12 cents and increasing the number of messages about 60 per cent. In the former case there was an increase, perhaps a justifiable increase, of profits to the private owners; in the latter there was a slight loss in the revenues, but a tremendous gain in public service rendered. It comes back, then, to the fundamental principle involved in the rule of private financing. Regulation is helpless to invest the private investor with a public-service motive; and without that motive, not the maximum social service, but naturally enough for the investor, the maximum return on his investment, is the rational rule of conduct.

Naturally enough, the owners, for the most part, when confronted by a proposal to postalize, object and point to the alternative of regulation. But this attitude on their part, it is not considered unfair to suggest, is dictated rather by private than by social considerations. Postalization puts an end to their profits. Regulation may or may not curtail them in a degree, while the stability of their monopoly is actually augmented by regulation, bringing with it an increment to the value of their

securities. In this connection it ought to be remembered that, whatever our hesitation may be on administrative grounds to applying the state principle to all forms of natural monopoly in obedience to the principle that "private monopolies are intolerable," such hesitation need not be felt as to postal subjects given the Postal Department. It may be confidently asserted that no bank or railroad organization, private or public, has better assurances of administrative efficiency to offer.

Objects of Relief

Having completed the analyses of the economics and the traffic effects of our systems of communication by wire, let us put the direct question; What, if any, are the deficiencies to be corrected? Answering this question just as directly, I wish to say that, while our postal rates are as low as those of other countries, we find that in the United States—

- (a) The telegraph charge averages more than double.
- (b) The local-call phone charge about double.
- (c) The toll and long-distance telephone charge about four times the rates generally prevailing in the principal countries of the world.

Proceeding on the assumption that our postal system can do as well for the wire forms of communication as it does for the letter—that is, can handle the wire messages as cheaply, compared with these countries, as it does the letter—it is suggested that these forms of communication should be postalized; that is, the postal agency should be permitted to conduct these communications in order to normalize the rates and extend the service to the great body of the people.

Proceeding, again, on the further assumption that the abnormal rates operate to abridge the total service rendered in the same percentage that the rates are excessive—a moderate statement, I think—then the Nation has short-work claims on such services as follows:

- (a) The telegraph: Number of messages, 175,000,000.
- (b) Local phone service: Number of messages, 7,500,000,000.
- (c) Toll and long distance: Number of messages, 300,000,000.

But the use of the telephone, which is an hourly convenience if not a necessity, in homes that can afford it, is at present con-

fined to a small percentage of the homes of the country. The proportion of telephones is 1 to each 12 persons. If the number of office or business phones be deducted from this proportion, it is indeed doubtful whether more than one family in six enjoy this convenience.

Now, the postal object is not merely to confer equal privileges *in form*, but to effectuate equality in practice. It, therefore, so organizes its service and formulates its rates as to remove any economic barriers to their use. The poor man, the very poor man, can actually utilize any form of the postal service. Its rates are adapted to his means. Mr. Vail, president of the Western Union Telegraph Co., declares:

There is a road to every man's door; there should be a telephone to every man's house.

The parallel is indisputable, but its complementary fact should also be noted. It was society, and not any privately financed monopoly, that built these roads. He also adds, apologetically for the Bell, that the system must be—

Under common control . . . it must be sufficiently strong to constitute practically one system, *intercommunicating, interdependent, universal*.

Now, is this possible in the United States? I feel justified in saying that it is possible here, if nowhere else; and the Swiss tariff system, I submit, affords demonstration of this statement. But of this the point fundamental—indeed, the whole objective of the discussion, the supportive facts—must be developed later.

Method of Relief

The Telegraph and Telephone Services Interdependent

These two methods of communication are so interrelated and interwoven and so identical in characteristics that the only difference which now suggests itself is that the communication in one case is addressed to the eye and in the other to the ear. The mechanism, the wire, and the active principle—electricity—are the same for both; moreover, it is a fact at present that the same telephone wire may be and actually is simultaneously engaged in conveying both the forms of communication, especially for

longer distances, where the telegram formerly was the more efficacious. Coupled with this fact that every telephone wire is in fact or potentially a telegraph wire is the circumstance of conclusive economic importance. Since the telephone wires permit the discharge of the double function without interference one with the other, the duplication of the physical agencies will involve a doubling of the expenses of each service—except for the points of large telegraphic traffic, where the skilled telegrapher will be needed as a supplement to the exchange personnel.

I think it sufficiently obvious that the telegraph and telephone are not two services, but really one service; as, indeed, they represent besides but one function, the function of intercommunication. Accordingly, it may be that they will require the application of but one policy and method of treatment.

We have seen that our problem is threefold, viz., the extension of postal relief to the three forms of electrical communication—the local call, the long-distance conversation, and the telegram—which I name in the priority of their importance. It appears that the postalization of but one agency, the telephonic network, may be effective for all these forms of relief.

Reconstruction

Having concluded that on both economic and social grounds these agencies of communication require public or, more exactly speaking, postal financing, it is now in order to consider the subject in its constructive aspects.

The postal method: The examples of nearly all the principal countries point in but one direction as to the agency which should be employed. It is the postal. Its truly wonderful genius for doing little services cheaply and well is now winning for it the express function in the United States, and in the following countries has added the telephone and the telegraph to the mail piece:

List of Countries Owning Both Telegraph and Telephone Postal Telegraph and Telephone Countries

Australia, Austria, Belgium, Bosnia-Herzegovina, Bulgaria, New Caledonia, Dahomey, Denmark (at least part—state, private, and municipal), Egypt (part), Formosa, France, Tunis, Ger-

many, Switzerland, Great Britain, Sweden (greater part), Greece, South Africa (Union of), French Guinea, Servia, Hungary, Roumania, India (British—state and private), India (Dutch—state and private), French Indo China, Panama (government), Italy (state and private), Norway (greater part), Japan (including Korea), New Zealand, Luxemburg, the Netherlands (state, municipal, and private), Russia (state and private), Siam (state and private).

Countries Owning Telegraphs Only

Abyssinia (Ethiopia), Alaska, Argentina, Bolivia (not all), Brazil, Chile (nearly all), Colombia, Costa Rica, Cuba, Mexico, Montenegro, Paraguay, Persia, Peru, Portugal, Spain, Turkey, Uruguay.

All the civilized, yes, almost all the uncivilized countries have postalized the electrical message, and it will be observed that Spain and Brazil only among the greater countries join the United States in licensing out the telephone agencies of communication to private parties. England naturally has been the last to yield, but since January 1, 1912, even she has assumed the entire postal function of conveying intelligence, by taking over the Bell service. Some of the Provinces in Canada took the step a few years ago, so that our situation is now so exceptional as to be actually noteworthy.

Construction de novo of the wire agencies, as a program, is denied us, of course, on the grounds of national economy as well as on sound political consideration. It therefore becomes necessary to compare existing structures and determine their adaptability for economical postal management and the purposes of the desired relief.

There is considerable likeness between the postal and wire mediums, even in their physical methods. Both systems are susceptible of classification into units of: (a) Number of offices; (b) number of employees engaged; and (c) miles of routes of communication. Let us see how the two compare in these respects; I say "the two," for they are not three in number. The telegraph and telephone are but one agency since the same wire—that is, the telephone wire—now carries the written and the spoken communication at the same time.

[Table 19 gives number of postal, telegraph and telephone offices, with numbers of employees, miles of wire, etc.]

Telegraphic communications are feasible over three routes:

First. The Western Union pole lines, 221,000 miles.

Second. The Postal Telegraph Co. pole lines, 66,000 miles.

Third. The Bell and independent toll and long-distance wires, 221,000 miles.

Considered merely from the standpoint of their value in economic use to the postal system, however, the Postal or Mackay telegraph lines would have to be rejected because of their insufficient extension. The Post Office would have to more than treble the Mackay mileage to do a general service. The Western Union is not subject to the same objection; it has the extension as a telegraph agency merely. But investigation discloses that only two-fifths of its wire—600,000 miles—is copper, so that three-fifths—900,000 miles—of its system would not be susceptible of satisfactory telephonic use. The third system, the Bell and independent toll or long-distance lines in combination, suffices in extent and mechanical construction for both objects, being entirely copper and having the requisite range and extent. All of which means that if we wished to give relief merely to telegraph users we might do so by the use of the Western Union. If we wished to extend relief as well to toll and long-distance users, the interurban and long-distance phone system would alone suffice. But if in harmony with other countries we wished to extend relief to users, actual and potential, of all the forms of communication by wire, we could do so completely by the single expedient of utilizing the Bell and independent telephone systems, since the telephonic network is potentially a telegraph network as well.

It appears that the toll and long-distance telephone lines aggregate in pole-line distribution about 220,000 miles and have a wire development of nearly 3,000,000 miles. Besides this they articulate with over 17,000,000 miles of exchange wires, distributing the messages into the homes and offices of the country through about 9,000,000 phones. This long-distance net work in terms of distance compares with the telegraphic network as follows:

TABLE 20
TELEPHONIC TOLL AND TELEGRAPHIC NETWORKS

	Miles.
Telephonic, pole lines.....	221,161
Telephonic wire distribution.....	<u>2,789,163</u>
Telegraphic:	
Western Union, pole line.....	220,928
Postal, pole line.....	66,154
Total.....	<u>287,082</u>
Western Union, wire distribution.....	1,517,317
Postal, wire distribution.....	408,735
Total.....	<u>1,926,052</u>

The above commercial telegraphic network in 1907 reached 6,828 offices and the railway network 22,282. Generally speaking, it is only at the former—the commercial—that messages are promptly delivered, and by far the greater number of railway offices are in towers and otherwise inaccessible, not to say so engrossed with the prior claims of railway messages that the nonrailway public is hardly to be said to secure a real telegraphic service. As opposed to this, the telephone network, through the Bell alone, reaches 70,000 places, and probably nearly 100,000 places as a whole. As against the 6,828 distributing offices of the telegraphic network, the telephonic network possessed in 1907 some 43,819 public and private exchanges—offices from which to dispatch or receive the telegram—and now some 9,000,000 phones through which instantaneous and economical collection and delivery of the message may be had. Another feature possessed by the telephonic network, not possessed entirely by the telegraphic, is that the former lines are copper, while but 40 per cent of the Western Union and an unknown proportion of the others are of such material. In consequence of this condition, the telegraph lines would require almost complete reconstruction in order to be susceptible of telephonic usage. President Vail, of the Western Union, refers to this fact in his report for 1912. He says:

No telegraph company could go into the telephone business without substantially reconstructing its telegraph plant to adapt it for toll or long-distance use, and, in addition, building exchange plants, involving an investment many times that of its telegraph plant.

The two wires which are necessary for one telephone circuit can by multiplying be made into four, six, or eight telegraph circuits and can be used for both telegraph and telephone transmission at the same time.

And, again:

A single telegraphic circuit or wire can not be used for telephonic purposes.

Another circumstance is that the telephonic lines are metallic circuits; that is, have the return wire necessary for the spoken message, while the telegraph lines do not, but rely on the "earth return," which is adequate for the telegram but unsuited for speech, except in uninhabited districts like Alaska, where the interferences of adjacent electrical industries are absent.

The practical effect of these differences is that the telegraphic network is fitted only to carry the telegram, with poorer collection and delivery facilities, while the telephonic network is adapted to carrying the telegram and also the conversation, and has the best collection and delivery facilities.

Stated in a more formal manner:

The telegraphic network will—

- (a) Dispatch the telegram and
- (b) Deliver it at, say, 7,000 places.

The telephonic network will—

- (a) Dispatch the telegram and
- (b) Deliver it, through 50,000 exchanges, at 100,000 places.
- (c) Provide instantaneous and economical delivery through 9,000,000 phones.
- (d) Provide toll conversations.

If, in connection with these patent advantages of the telephonic network, economy in operation is also to be considered, it ought to be observed that in maintaining and personneling the telephonic network for telephonic uses the operating and capital expenses will have been met and discharged for the telegraphic service as well. Except for the employment of telegraph operators at points of high density, and the telegraphic instruments necessary in the telegraphic traffic, no additional expense would be incurred for the telegraph service. Indeed, this element is involved in a triplicate way on the telegraphic lines. To the extent that the Postal Co. duplicates the lines of the Western Union we should in effect be paying two bills of maintenance expense; first, on the Western Union, discharging only the telegraphic function, and then again on the Postal, a mere duplicate of the former. If to this be added

the circumstance that the toll telephonic network left in private hands could give a telegraphic service, practically without cost to itself, which, whatever its rates, supplemented by its instantaneous telephonic delivery and collection, would take the most lucrative business from the Postal Telegraph agency, it becomes evident that the proposition to acquire the telegraphic in preference to the telephonic network can reflect only a superficial view, rational 30 years ago, but wholly untenable since the interurban and long-distance telephone wire has been developed. To take over the telegraph wires at this time would for these reasons be only to invite unnecessary failure and, perhaps, postal bankruptcy.

The English experience appears to be conclusive upon this point, namely, that an independent telegraph business, because of the growing inroads of the telephone traffic, is, for the future, of doubtful financial feasibility. Even in the United States there are three long-distance communications by phone to one by telegraph, while in Germany the ratio is five to one. Prudence therefore clearly dictates that our postal system should deliberately avoid the telegraph wires and select instead the telephone lines. Such a choice would enable the Postmaster General to render both services at minimum rates, since he would have but one bill of expenditure to pay for their joint operation.

We have seen that the total capitalization for the commercial companies was \$773,268,344, and that the 1912 capitalization of the Bell was \$620,760,654, which, taken at the proportion of its wire mileage for 1912, would give a present capitalization of \$874,310,800 for our entire telephonic network. While this conclusion cannot be verified in the absence of official data for the independents, it is believed that it actually overstates the proportionate capitalization of the independents.

The average rate or receipt per local call for the principal countries of the world is shown to be 1.1 cents, which compares with a rate exactly the same for the independents in 1907, which includes their toll messages, and with 2.1 cents per local message, exclusively, for the Bell Co. in 1912. As late as 1900 the Bell report gives the cost to the subscriber as varying from 1 to 9 cents per connection. As the Bell system includes from three-

fourths to four-fifths of the telephonic institution, it is apparent that its operations present conditions which are national in character. This deduction will graphically appear when we compare it with even the national telephone institutions of the greatest countries, which it overshadows in capital invested as well as in wire development and in gross expenditure and income. It is only our postal system which exceeds it in scope and extent or the other characteristics of a national institution. It would seem to be unnecessary to indicate the similarity between the postal function of communication and that of the wires, while attention has already been given to the fact that but about one home in five can now be reached by the electrical communication. That this is due to the limitations natural to the rule of private financing may be shown in a comparison of the universality of the postal agency under contemporaneous conditions. It is certain that under private financing the wires are not destined to follow the mail carrier into the ordinary home. And yet, for even more pressing reasons of use and necessity, this is what they should do. It is as much the necessity and the right of society to have the effective means of sending its communications to the homes of the masses by wire as by human carriers, not to speak of the similar necessity and the right of the masses to enjoy such facilities for their own uses. Private financing has exhausted its right to a longer lease of the agency to realize this end, even if it were to convince us of the sincerity of such a program.

Local rates: It would be highly desirable, if financially feasible, to secure for the phone user a local rate of a cent per call, the average statistical receipt per call for postal-telephone countries, and approximately the average receipt with the independents. Such a rate would, if uniformly available, place the phone service within the reach of every American home. No one should complain of such a rate, as with our wage levels the 1 cent is an actually negligible price.

The closest tariff approaches to the cent-a-call rate are the German and Swiss tariffs for measured service with a cent-a-call charge. But the Germans have a basal fee besides, and the Swiss also a basal arbitrary charge amounting, after the second year, to \$7.72 per annum. Serious apprehension of inability

to attain the cent rate as an average statistical result need not be felt in view of the experience of the American independents and foreign postal systems. But grave doubt may be felt as to applying such a rate to the metropolitan populations.

The Bell reports give the average cost per subscriber for its entire system, excluding the cost of toll lines, as \$105 each. The total cost of construction for 400,000 subscribers' phones and 25,000 (?) booths of the New York Telephone Co. is given in the report of the Public Utilities Commission, as follows:

Telephone plant	\$50,128,000
Less depreciation reserve.....	5,123,786
Total.....	\$45,004,214

Thus the cost per phone is \$106, or but one per cent greater than the average. The assumption that a metropolitan plant exceeds the town and rural so greatly in cost does not seem to be borne out. When millions of miles of wire can be massed in a single conduit, even though at an underground expense, the cost per mile and the maintenance service are greatly reduced.

But no discussion of local rates is actually valid that does not explain the use being made in many American cities and other countries—Munich, and so forth—of the automatic system with which the subscriber quickly and simply makes his own connection, eliminating the exchange operator, and by switching and trunking devices reducing the miles of manual wire per phone (2.50) in the most substantial way. There is now but 1 phone to 12 persons, and these phones are in the stores and offices, probably not more than one home in five being so provided, especially in the larger cities. Each city block of fifty or a hundred homes has a few subscribers, whose lines, in connection with the automatic system and its switching and trunking devices, could be used as trunks to the central for the multitude of block-party lines that would follow the introduction of the postal cent-a-call rate. The total investment per subscriber might thus be brought down to \$70 or lower, while the expenses of operation in the cities would be reduced by the amount of the expense of exchange operators. One should feel rather hesitant to make the above statement if the actual facts of practice and accomplishment were not before him. In the case of these local rates so various and incongruous even within the Bell network,

it is submitted that while a goal should obtain toward which the Postal Department would direct its aim, yet the approaches to an ultimate uniform rate for local services should for a time be experimental and only tentative in spirit. The widest latitude should be given the department to conduct its experimentation, and specific freedom to try out its plans in selected places.

If it be found that metropolitan centers represent a greater capital cost per phone, I think it will also be found that such phones represent an even greater percentage of use or patronage. The average utilization of the subscriber's phone is said to be less than 2 per cent of its time capacity.

For all practical purposes the cost of conducting the agency will be nearly the same whether the lines be used at their maximum or their minimum capacity. The problem of the rate maker is therefore twofold:

(a) The body of rates must on the average pay the total cost of service.

(b) The particular rate or adaptations of the rate should produce the maximum utilization of the agency and thus the greatest service to the public.

Therefore, according to the hypothesis, if the gross annual cost of operation were known and the amount of traffic which a given rate graduation would result in might be predicated, it would be feasible, theoretically, to adjust the rates to gratify both maxims. So much for the theory, which, of course, is not precisely realizable, although the universality of postal operations renders theoretical reasoning highly useful and almost accurate, as applied to average periods. What in practice is feasible is a system of approximations as to cost and traffic; and it is by these methods that private financiers pass upon such projects in the establishment of public utilities of the various kinds. Applying this method to our subject, let us observe the probabilities.

Cost of Maintenance and Operation Interurban Network

The operation of 220,928 miles of pole line of Western Union in 1912 represented expenditures as follows:

Operating expenses, including rent of leased lines, reconstruction, repairs, miscellaneous interest, etc....	\$35,350,422
Taxes.....	713,413
Total.....	\$36,063,835

This represents the operating and maintenance expenses of a pole-line network identical in mileage with the toll and long-distance network, including depreciation on 1,500,000 miles of wire, as against about 3,000,000 miles of such telephone wire. It also represents the wastes of telegraphic accounting previously set forth, as well as other elements of expense indicated as susceptible of elimination under postal operation, e. g., office rents, legal expenses, corporate salaries, and so forth. If we ignore these savings and add to the total sum interest at the rate of 3 per cent on \$200,000,000 of Government bonds and 4 per cent to cover the depreciation not fully included in the expenditures statement of the Western Union, and also add 5 cents per telegram and 2½ cents per call for the extra business to follow the proposed reduction in rates, then the following table approximately represents an annual fiscal statement for the telegraphic and long-distance telephone services under the new system:

Expense of operation and maintenance of 221,000 miles of pole line and 3,000,000 miles of interurban network	\$36,000,000
Additional for depreciation, 4 per cent.....	8,000,000
Interest on bonds, 3 per cent.....	6,000,000
600,000,000 telephone connections, at 2½ cents each....	15,000,000
300,000,000 extra telegrams, at 5 cents each.....	15,000,000
 Total.....	 <hr/>
	\$80,000,000

The receipts of the toll and long-distance lines are now between sixty and seventy millions. The application of continental rates to this traffic has produced a result of over five long-distance calls per capita per annum in Germany as against about three here, although our phones double theirs in per capita distribution. With reference to the number of telegrams, the New Zealand experience, now nine per capita, is presented. From all these data it is assumed that under postal rates the long-distance phone traffic would equal the German and half equal, at least, the New Zealand development for the telegram. Such results in tabulated form would be as follows:

Average receipt, 300,000,000 telegrams, at 25 cents each	\$75,000,000
Average receipt, 600,000,000 conversations, at 10 cents each.....	60,000,000
 Total.....	 <hr/>
Deduct estimated expenditures.....	\$135,000,000
 Profit.....	 <hr/>
	\$55,000,000

Obviously the figures as to the prospective traffic can only be speculative; but they are no more so than the conditions and computations of private enterprises in the same field. In their support it may be said that the gross figure of \$135,000,000 approximately represents the gross receipts now derived from the toll and telegraph business; and it is not apparent why the postal system should not secure an equal gross revenue with the inducement of offering double and treble service. That the substitution of low-service rates for high ones will find a complementary potential traffic inhibited by the higher rates has been made sufficiently evident. Yet it seems justifiable to add that the experience of the parcel post in giving mobility to an immobile but potential express traffic sustains the thesis. Probably two hundred million shipments will be moved as parcels by the post this year, certainly not less than one hundred and fifty millions; and yet only about fifty millions of these have been taken from the express companies. The low postal rates have had the effect of creating new traffic to the extent of trebling or quadrupling the former traffic.

Telegraph Rates

The present telegraph tariffs, beginning with a minimum of 25 cents for 10 words, are graduated for increasing distances in multiples of 5 cents up to 50, whence the rate is 60, 75 cents, and \$1. The additional word rates correspondingly rise from 2 cents to 3, 4, 5, and 7 cents, respectively. These rates yield now an average on the message of from 38 to 40 cents. Special rates are given the press on individual messages as set forth in an appendix; while the great body of the news is handled by the press associations over leased wires, for which the telegraph company is commonly paid \$20 per mile per annum, the association supplying its own operators. The data are insufficient to permit an opinion as to the merit of this lease rate, but since it is a wholesale rate it is not so likely to be excessive as the individual message rates.

We have seen that, differing from our postage rates, which are quite as low, the telegraph rate here averages about twice on the shorter, and on the longer distances from three to four times as high as in other countries.

[Table 21 gives the comparative rates of the United States and other countries per telegram and the number per capita.]

Thus, in Germany the rate is 12 cents and 1 cent, with possible distances of 700 miles. In the United States the rate for a like distance would average 50 cents. There are a few foreign rates lower than the German, but it represents a mean for postal-telegraph countries, including New Zealand, with its American wage levels. It is not believed that a flat rate for all distances in a country so large as the United States could be made compensatory without making it too high for the shorter—as it is in Russia—and too low for the extreme distances of which our country abounds. Tentatively, it is proposed to adopt the 12-cent minimum, plus a cent per additional word, which is typical for postal systems, the 12 cents to embrace but 12 words, counting address and signature. This rate, it is proposed, shall be effective for 200 miles. For greater distances a rate scale based on the declension of freight rates for increasing distances is suggested. Broadly regarded, the railway class rates double as the distance quadruples; or, stated in mathematical terms, the rate increases in proportion to the increase of the square root of the mileage of the journey. This law is a recognition of the fact that the terminal service does not increase with the lengthening haul, a fact which would seem to be of even greater importance for increasing telegraph and telephone message journeys. Applying this law to the telegraph message, we should have a result as follows:

Twelve cents, up to 200 miles.

Twenty-four cents, up to 800 miles.

Forty-eight cents, up to 3,200 miles.

But the above table, which is merely expository, contains only three jumps from coast to coast, while the telegraph companies have found it prudent to have not less than eight, from their 25-cent to their \$1 charge, for the most part representing increases of 5 cents per advance. The scale following is therefore presented as supplying the necessary gradations. [See Table 22, page 76.]

It is thought that the day and night letter services adapted to the above rates should be retained, in order that the wires be utilized during otherwise idle hours of the day and night, and

to these should be added a new species of telegram, auxiliary to the long-distance conversation. I call it the phone-appointment telegram, say, at a flat cent-a-word rate, to be used by parties in fixing a definite moment for long-distance talks. Much time and annoyance, it would seem, might be saved thus to the parties themselves as well as otherwise wasted plant and personnel in the preliminaries of the attempt to connect long-distance parties.

TABLE 22

Cents.	Miles.	Additional word. Cents.
12.....	200	1
18.....	500	1
24.....	800	1
30.....	1,400	1
36.....	2,000	2
42.....	2,600	2
48.....	3,200	2

The above tariffs would average a little less than one-half of the present telegraphic rates, and it is thought would produce an average receipt of 25 cents, somewhat exceeding the average 21-cent receipt for Denmark on a flat 13-cent minimum and $1\frac{1}{3}$ -cent additional word rate. Such rates, when taken in connection with the extension of the service to all the post offices, homes, and offices reached by the telephone wires, could hardly fail, ultimately, to render effective the maximum of business and social demand for this form of correspondence. Surely such a development is due us. The people of the United States exceed all others in the number of letters per capita on identical postal rates. It is humiliating to think that we must occupy but the eighth place among the nations in the degree of use made of the wonderful telegraph agency. Great Britain, Switzerland, France, Norway, Denmark, Belgium, and the Netherlands, all with lower wage levels than ours, precede us in this respect, while New Zealand, with wage conditions like our own, manages to extend its average citizen eight times the telegraph service we get here. And this has been done for a generation. Surely the country has paid enough for its tory statesmen and monopolistic financiers.

The toll telephone rate: It has been said that the telegraphs have word-miles for sale, and that the limit of their capacity

might only be reached when the best word-sending devices were fully occupied in transmitting words over every mile of their wire. It is equally true that the telephone agency has mile-minutes to sell, and that its theoretical limit is only reached when every wire is conveying a conversation every moment during the year. Such is the theory. In fact, during sleeping hours, say from 12 to 6 a. m., there can be but a very reduced demand. The conversation unit is three minutes in all countries, and according to the reports of the Bell Co. the time consumed in making the connection and the conversation runs from five to seven minutes. Taking the average as six minutes, if a circuit were, theoretically, in constant use throughout the year, 87,500 conversations might take place. The German toll and long-distance network consists of 19,623 circuits, while the Bell Co.'s network reaching about the same number of people, appears to be 33,164. The number of conversations per circuit in Germany was 16,417 in 1910, while on the American system the average was but 7,164. It is pertinent to remark, however, that the average charge in Germany was less than 4 (0.036) cents, while in the United States it was over 19 (0.192) cents. The German rates were effective to induce traffic equal to one conversation to each 31 minutes, or 19 per cent of the theoretically available phone time; while the American rates produced one conversation to each 73 minutes, or a utilization of about 8 per cent of such time. The low utilization in the United States is indubitably the result of her higher rates—over five times those of Germany. This low utilization is made a matter of observation, if not of complaint, in the reports of the American system.

Unlike the telegraphic agency, where the press and the night letter largely preserve the nighttime from waste, while the day letter may use the idle moments of the day, little has been done in the United States to distribute the distance telephone traffic equally throughout even the day hours. In Germany considerable effort has been made to effect such a distribution. There are rates for urgency or immediate demand service, rates for regular subscribers at given hours, regular day and regular night rates, and monthly contract rates.

Under the operation of postal motives it would be interesting to sketch the possibilities of the use which might be made of

the waste hours from 12 p. m. to 6 a. m. A purely fanciful case is presented for illustration. The mother lives in New York and her daughter in Chicago. The scale rate is now \$6 for a three-minute talk, and this talk, purely domestic, never takes place between poor people. But the wires are idle, and in Germany the rate would be but 48 cents. Why not permit the use of the lines during midnight hours at that rate for such purpose?

In another part it is shown that the total cost of maintaining and operating the interurban telephonic network for telegraphic and telephonic uses would be about \$80,000,000. If half of this represented the telephonic share, the cost per mile of wire, exchange service included, would be at the rate of \$13,333 per 1,000 miles. The New York to Chicago wire measures about 1,000 miles, and with return wire 2,000 miles; thus the half annual cost of maintenance and operation would be \$26,666, or about 30 cents per six-minute period, counting every moment of the year. These figures are not to be taken as accurate, or even approximate, and yet it is asserted that the true figure, when secured, will not differ enough to impair the case.

The truth is that the German rate, while not seductive to him, might well be introduced during these midnight hours, if the private financier did not fear the effect in two directions. It would call attention to the abnormal day rate, some ten times as high, and might divert a serious proportion of the high-priced day traffic to the cheaper service. Perhaps it might have been wiser for the gentlemen controlling these really postal agencies to have taken the public into their confidence and formulated rates designed to secure the maximum utilization of their plants, even if their rates at first appeared utterly incongruous. But they are not sure that it would be wise. Nor, indeed, can it be very certain that their fears are groundless, considering the state of ignorance and indifference which has permitted the agencies to fall into private hands at all. Their patriotic night rates might indeed be made the false basis of a demand for irrational day rates.

The basis for a long-distance rate, it is believed, would include (1) the total number of messages likely to be transmitted on a given rate—the experience of other countries would afford ap-

proximate means of computing them; (2) the total cost of service divided into units of mile-minutes; (3) the graduation of rates for the different hours of the day and night to correspond with the relative desirability as determined by traffic demands; (4) the distribution of wasted or unused plant values into special hour rates in a way the least deterrent to the demand for the service. Doubtless it would require considerable experimentation by the postal department to acquire data for the use of these bases, but the postal system would have a motive to experiment, and it could rely on the support of the public in its efforts.

Expository toll rates: With the object rather of stating the conditions of the problems connected with the long-distance rates, I am presenting a tentative tariff for the different distances up to 1,000 miles. Two administrative purposes are sought to be realized, the utilization of the blank period between 12 m. and 6 a. m., and the comparatively blank period from 6 to 9 a. m., as also from 8 p. m. to 12 m., in the telephonic plant day of 24 hours. Conversely, it is sought to cut down the traffic peaks one-half between the hours of 9 a. m. and 12 m. and 6 p. m. and 8 p. m.

It is obvious that if the blanks could be partly filled by new traffic such business would represent nearly all gain to the postal department. It is equally obvious, of course, that if future increases of traffic during peak periods could be diverted to the comparatively blank periods by sufficiently attractive rates, a business from three to four times that now done could be accomplished on the present capacity of the wires. Theoretically the rates should rise with the degree of the demand and fall with it in order to scatter or distribute the traffic as nearly equally over the 24 hours as possible, and thus secure the maximum effective capacity of the plant. With a view to illustrate rather than to propose methods for this purpose the following tariff is presented.

[Table 23 gives the long-distance rates, per 3-minute conversation, during different periods of the day.]

The busy-hour rates could be very much further reduced in the event that the schedule proved effective in more equally distributing the traffic. It is for this purpose that the urgency

rates are made so high; for the five busy hours they are as high as at present. Doubtless there is a body of demand that cares not for the highness of the rate—most of the present patronage, perhaps—if it can secure quick and instantaneous service. This character of service is called “urgent” in Germany, and pays three times the regular rate for its preference over the regular traffic.

The rates outlined are of seven varieties: The midnight rate for social objects slightly exceeding the German day rate; the 6-to-9 morning rate and the 8-to-12 night rate, designed to attract traffic from peak periods; the 9 a. m. to 12 m. and the 6 to 8 p. m., or peak periods, with the rates purposely left high to divert excess demands at those hours to other periods; the urgent or quick-service rates; the Sunday rates for social uses; and the one-half or one-sixth per minute additional rate, for overtime, which corresponds to the first three-minute rate since the additional allowance of three minutes for making the connection is included in the first charge.

It will require some years of experimentation to determine just what graduation of rates to busy and nonbusy periods of the day and night will secure the highest attainable utilization of the plant; and the consummation of the lowest rates must await, and is dependent on, such a degree of utilization. Meanwhile the present rates, under the above schedule, run from but one-fifth to two-thirds of the existing rates, with it is believed a substantial enlargement of plant capacity during peak demands. Even if our long-distance traffic carries a rate four times normal, and the public service is at perhaps but one-fourth of its potential, yet normal, though compensatory, rates would not be practicable if the effect was only to exaggerate the peaks and thus perhaps require immediate additions to the plant, although its average utilization, as shown, might be but a paltry 8 per cent of its total capacity. Time and experiment only will qualify the rate maker to formulate the most desirable rate structure.

Comparison of Probable Receipts and Expenditures

It may be of interest to ascertain how the account would have stood, say for 1912, had the telephones been under postal

management, with the telegraph function added. Taking the receipts and expenditures of the Bell system for that year and adding those of the independents—estimated, Bell equals 71 per cent, independents equals 29 per cent—and adding also the receipts and expenditures which the superimposing of the telegraph traffic of the telephone network would have involved, we should have the following statement:

[Table 24 gives figures for receipts, expenditures and balance.]

The above table substantially reflects what the postal budget for 1912 would have been had it conducted the telephone and telegraph services over the telephone network upon the existing telephone rates, supplemented by the telegraph rates proposed. It is plain enough that the department will be on safe financial ground, with a surplus of a third of its receipts to apply to the extension of the service to the farmside and the homes of the masses.

Against this alluring balance of more than one hundred millions it will be urged that the statement takes no account of the higher wages which the postal system would have paid. Granted; its scale would have been higher. But as a future factor it is submitted, as the judgment of the telephone engineers, that the reduction of the personnel concomitant with the certain introduction of the automatic phone much more than meets the difference between private and postal wages.

Summary of Benefits

Let us see what our reasoning supports as the advantages to be ultimately derived from a postalization of the telephonic network.

- (a) A cent a word telegram.
- (b) Long-distance rates from one-half to one-fourth those prevailing.
- (c) A cent a call, local conversation.
- (d) Universal use of the telephone.

Only item (d) presents an achievement not already attained in other countries; i. e., the phone in every man's house. But with item (c) within reach our American wage levels offer the highest assurance that a service so cheap and necessary will become as universal as the letter service.

I distinguish the difficulties which attach to any constructive program from objections which take the character of fundamental defects in the proposal itself. Such difficulties, for example, as the inconvenience of financing the project, the adjustments and readjustments necessary to secure the desirable properties in the rates, the extensions of the network to meet additional demands, the addition to the postal service of the numerous personnel essential to the conduct of correspondence by wire, and, finally, the effect of competition by the postal telegraph on the telegraph lines in private hands, all of which may be difficulties and yet not objections. It is meant to meet these in an absolutely frank way, and so I shall take them up in their order.

Financing the acquisition: It is assumed that the acquisition of the total telephone network, embracing local exchanges, toll, and long-distance lines, would cost about nine hundred millions of dollars. The purchase would, of course, be financed by the issue of government bonds. The question presented is, therefore, whether the marketing of this amount of bonds would be so difficult as to render the proposition undesirable.

Great financing enterprises during recent years have been as follows:

The Panama Canal.

The United States Steel Co.

Acquisition of the railways by Japan.

Acquisition of the railways by Switzerland.

Acquisition of one-third of the railways by France.

Acquisition of the national telephone network of Great Britain.

The plan would not involve the compensation of the owners in one gross payment or at one time. While it would, of course, be necessary to acquire title and possession of the networks by a single process of statutory appropriation, and on the same day, it by no means follows that payment for the properties would or could be invoked in the same total or single way. There are, altogether, some 3,000 companies or distinct legal proprietorships of the network, and even the Bell associated companies number more than 200. There would, therefore, be as many distinct payments as there are different proprietorships. Moreover, these payments would naturally extend over a period of time sufficiently long to enable the Interstate Commerce

Commission to make its appraisals and the courts to adjust such legal questions as to valuation as may arise. It is thus apparent that the payments would be distributed throughout a period of several years and be decentralized into as many acts of payment as there are distinct legal owners.

Résumé

To be brief, the investigation discloses that our telegraphic rates are the highest among 20 countries, running from 25 cents to \$1, while in other countries they average about 12 cents, or a cent a word. The result of these abnormal rates is that we rank but ninth as telegraph users, with one and one-tenth telegrams per person to our credit per annum, while in New Zealand, with the 12-cent rate and our price and wage levels, the use of the telegraph reaches as high as eight telegrams per person.

Against these conditions it appears that our postal rates average lower than other countries, and that the number of letters here—101 per person—is the highest in the world.

The telegraph companies seem to be lacking in institutional economy or efficiency. The operation of sending a telegram is loaded down with 74 incidental services and processes, not less than 50 of which would be replaced by affixing the postage stamp. Notwithstanding they have the greatest business per office, yet their daily product is less than 10 telegrams per employee, even less than that of New Zealand, which has less than one-third the business per telegraph office. The American inefficiency is further exaggerated by the duplication of telegraph offices in all the important towns and cities, and the denial of the service at many thousand necessary points.

A striking feature is the discovery that the telegraph service is a relatively declining institution, and that it would be unwise now to postalize it alone and as a single service. For 10 years in England the number of telegrams has been actually stationary. To take over the telegraph lines alone and operate them merely as telegraph lines might result in postal bankruptcy. Separated from the telephone, they are not now surely self-sustaining as mere telegraphs. Because you would rather talk than write to a person, you use the telephone rather than the telegram, if the rates permit. In Germany, where both

telegraph and telephone rates are normal, there are five times as many toll or long-distance conversations as there are telegrams, and even in the United States from two and one-half to three times as many. There would be no advantage in taking over the telegraph lines; the investigation makes this clear.

But our toll and long-distance rates compare with those of other countries even less favorably than do our telegraph rates. The average interurban receipt in Germany is but 4 cents; here it averages 20 cents. The long-distance rates here are made on a scale of 6 mills a mile per three-minute conversation, as against an average charge of about 7 mills a mile received by the railways for transporting a ton of freight. The average charge on the Continent for a 300-mile talk is 30 cents; here it is \$1.80, or six times as great. It is not unfair, or inaccurate, to say that the American interurban telephone rates are the scandal of public-service rates the world over. The American telephone monopoly takes the thirteenth place only among 17 countries with regard to the lowness of these rates.

With respect to local telephone exchange rates, we have three main divisions, the farmers' lines, which cost the average subscriber about a half cent a call; the independents, which cost a little over 1 cent a call, but usually with the half service permitted by telephone competition; and the local rates of the Bell monopoly, which average a little more than 2 (2.10) cents per call, or just twice the average charge in other countries. While our postal rates give us the first rank in lowness of charges, this company ranks but fourteenth among 16 countries with its local charges, and we are one of three countries where the charge per local call exceeds the letter-postage rate; the other 13 countries giving a much lower charge per phone call than their letter rates.

The subscribers' rates in American cities, compared with continental cities, are about three times as high. For example, New York, where 5,400 calls, about 15 per day, under a measured service tariff cost more than the four unlimited yearly rates of London, Paris, Berlin, and Stockholm together. For like services, Baltimore people pay more than the rates for London and Paris combined, and Washington pays as much as the five cities of Amsterdam, Rotterdam, Auckland, Tokyo, and Copenhagen

combined. In postal-telephone countries the local toll tariffs tend to run about one-half the charge for a letter, while here it runs with the street car fare, and sometimes exceeds it, when it is three times the letter rate.

While competition does not supply a remedy because it divides the service and necessitates the payment for two phones, yet it throws an interesting side light on the tendency of a private monopoly to jack up the rates. Thus of 60 of the great American cities, 24 averaging 342,486 in population, pay an average annual phone rate of \$53 under competition; while the other 36 cities, averaging but 188,629 in population, without competition, pay an average rate of \$81. Since competition can only augment the total cost of operation it is apparent how private monopoly and high rates go hand in hand.

Telephone development has reached its substantial limits in the United States under private capital with the extension of the service to the very profitable office and well-to-do home traffic. To extend it to the homes of the masses, as the public roads and postal service now are extended, the postal agency is necessary. If the telephone lines are postalized, both the telephone and telegraph business can be done over them, as in other countries, where a telegram and a conversation go over the same wire at the same time. It will be unnecessary to take over the telegraph lines here (capitalized at \$240,000,000); as both kinds of communication can be handled on the telephone wires, which exceed the telegraph wires in mileage and geographical distribution.

The telegraph lines would have to be substantially reconstructed to add a telephone business to them, while the addition of the telegraph instruments to the telephone wires may be accomplished at a negligible total cost. This circumstance shows the weakness of private monopoly. Instead of duplicating the telegraph network with a separate toll and long-distance system as the American Telephone & Telegraph Co. has done, the postal telegraph countries have made the one network serve for both functions, by articulating the telegraphic with the telephone exchanges.

The cost of acquiring the telephone networks is indicated as something less than \$900,000,000, for which it is proposed to issue 3 per cent bonds, payable in 50 years. It is calculated

that the postal system by superimposing the telegraph service on the telephone lines at half present telegraph rates may net some fifty millions annually from that traffic alone, which with the present profits of the telephones, and after the deduction of interest on the bonds and depreciation, would supply the department with a large surplus for extensions, and so forth.

The telephone rates should be worked out experimentally by the Post Office Department in a few years, with the assured prospect of ultimately securing telephone and telegraph rates, like our letter rates, as low as those abroad. That is, rates about half those now obtaining for the telegraph and local telephone services, and about one-fourth those charged for the long-distance telephone conversation. Our other postal rates, including the highly profitable parcel-post rates, have been made as low as in other countries, and the indications are that like results can be obtained for the wire service when postalized.

The suggestion that the interurban and long-distance lines alone be postalized and the telephone exchanges be left to the municipalities is found to be unsound. The postal system can finance and operate the exchanges more economically and efficiently, and the divorcement of the exchanges from the interurban and long-distance lines would necessitate the maintenance of two personnels at substantially increased cost. It would be like divorcing the local post offices from the Post Office Department and turning them over to the mayors to run. The towns and cities have enough to do if they give proper attention to those utilities which are distinctly local. Moreover, the farms and countryside villages which are without local administrative governments would not be reached by a municipal service.

The financing of the acquisition and the valuations of the properties would cover several years; and while the properties should be taken at one time with their personnel and systematized, the payments for them would have to await the final valuations by the Interstate Commerce Commission, the Treasurer paying the owners 4 per cent interest quarterly during the interim. The financing would thus be decentralized into as many payments as there are distinct legal ownerships. It is not thought this financing would involve difficulties seriously greater than those of the Panama Canal. Switzerland has re-

cently successfully financed the purchase of her railways, amounting to about \$50 per capita, while the telephone acquisition here would be less than \$10.

With respect to management, it is found that our postal system is highly efficient. It ranks next to the highest—Belgium—among 16 countries, and perhaps is actually in advance of her. Our product per average postal employee in 1912 was over 60,000 mail pieces per man, as compared with Germany at 37,000 and France at 34,000, countries which rank eighth and tenth, respectively, in postal efficiency. In the matter of telegrams handled per employee, our companies are outranked by New Zealand, notwithstanding the concentration of the telegraph business in a relatively few offices here. The Bell telephone monopoly ranks but ninth in operative efficiency among 16 countries. In 1912 it handled 58,000 telephone calls per employee, as against 149,000 per employee in Norway. This is mainly because its abnormal rates condemn the operative plant to comparative idleness—its interurban lines show but 8 per cent of utilization as against 19 per cent in Germany—while the number of operators engaged in maintenance and other services remains the same, whether the phones are actively or but sparingly used. The postal system with normal rates might easily double the Bell efficiency in number of calls per employee, and the independents do better it by nearly 50 per cent on account of their lower rates and consequent higher utilization of plant and personnel. With the number of calls thus doubled, the expense per call would be practically reduced one-half, and it may thus be seen what the postal motive could accomplish in rate reduction without substantial increase of expense. This illustrates the natural infirmities of private monopoly, which is without a motive to double the service even where expenses and profits will remain the same.

United States. 63d Congress. 2d Session. Senate Document No. 399. Government Ownership of Electrical Means of Communication.

A report to the Postmaster General, entitled "Government Ownership of Electrical Means of Communication," prepared by a committee of the Post Office Department.

Relation of Telegraph and Telephone Systems to the Postal Service

The founders of this nation were keenly alive to the importance of keeping exclusively under government control all means of communication, and therefore provided in the Constitution that "the Congress shall have the power . . . to establish post offices and post roads."

The framers of the Constitution probably never dreamed of postage stamps, railway postal cars, canceling machines, pneumatic tubes, telegraphs, telephones, aeroplanes, and radio equipment. They specified nothing concerning means of transportation or methods of distribution, but wisely left to future generations a broad provision under which they would have the right to avail themselves of such improved means of communication as might be discovered and developed. It was clearly their intention that the Government should control all means for the transmission of intelligence.

Under government control the postal service of our country has prospered, expanded, and developed to its present high state of working and economical efficiency, adopting in the course of its growth practically every means of transmitting intelligence except electricity. The service has gone hand in hand with the advance guard of civilization. Its facilities have been extended to the smallest and remotest towns and villages in our land, not with regard to cost or with an eye to profit, but with the sole purpose of serving the needs of the people irrespective of wealth or position.

The United States alone of the leading nations has left to private enterprise the ownership and operation of the telegraph and telephone facilities.

In 1843 this Government aided in the construction and assumed as a part of its postal duties the operation of the first

electric telegraph. But on March 4, 1847, because of the unwillingness of Congress to authorize any extension of the service then in operation and because of a deficit in the postal finances, the control of this facility was surrendered to private hands. However, in 1866, Congress, aware of the danger of permitting this service to remain under private control in view of its intimate relation to the postal service, asserted that the facility was within the purview of the constitutional provision for the postal establishment, and enacted legislation looking to the acquisition by the Government of all telegraph lines.

With an indecision that is to be regretted the fulfillment of this commendable purpose was deferred for a period of five years in order that the telegraph monopoly might during that time be indemnified by the continued enjoyment of its exorbitant rates for the loss of its grip upon the public means of transmitting intelligence.

The relation of the telegraph to the postal service can not be better described than by quoting the following clear and succinct statement of Postmaster General Howe in his report for the fiscal year 1882:

The business of the telegraph is inherently the same as that of the mail. It is to transmit messages from one person to another. That is the very purpose for which post offices and post roads are established. The power to establish is not limited to any particular modes of transmission. The telegraph was not known when the Constitution was adopted. Neither was the railway. I can not doubt that the power to employ one is as clear as to employ the other.

Numerous other Postmasters General of the United States have advocated the acquisition of the telegraph and telephone systems of the country.

What has been said in favor of government ownership and operation of the telegraph applies with equal force to the telephone service. As in the case of the telegraph, this Government might properly have taken up and operated in connection with the postal service the first telephone system of the country. This judgment is confirmed by the experience of the British Government.

Section 4 of the British telegraph act of 1869 provides that:

The Postmaster General by himself or his deputies and his and their respective servants and agents shall have the exclusive privilege of transmitting telegrams within the United Kingdom of Great Britain and Ire-

land, except as hereinafter provided; and shall also within that Kingdom have the exclusive privilege of performing all the incidental services of receiving, collecting, or delivering telegrams, except as hereinafter provided.

In a lawsuit to determine the question the highest courts of Great Britain held, on December 20, 1880, that a telephone is a telegraph, and a conversation by telephone is a telegram within the meaning of the telegraph act, and that the authority enabling that country to operate the telegraph enabled it also to operate the telephone.

The telegraph and telephone systems have long been recognized as necessary adjuncts to a complete postal service. As with all other privately controlled public utilities, these facilities have been extended in our country only in proportion as the service to be performed has insured substantial dividends for the stockholders. Under private ownership, therefore, the telegraph and telephone are for the classes. Under Government ownership, through the postal machinery, which is conducted in the interest of the whole people and already reaches every man's door, the benefits of these facilities could be extended to the masses.

It is obvious that the longer the acquisition by the Government of these facilities is deferred the greater will be the cost. Moreover, it is economic waste to permit private enterprise to build up vast properties that must eventually be taken over by the Government in resuming its constitutional monopoly at a cost out of all proportion to the value of the parts of such properties that may be utilized to advantage in the postal system.

The study of this subject has disclosed that the telegraph and telephone systems of the country are so inextricably allied that any consideration of the one must necessarily include the other. Your committee has therefore been under the necessity of prosecuting its inquiry beyond the province contemplated by your order and accordingly its report covers both.

Telegraph Service

According to the best available data, the telegraph plant of this country in 1912 included about 247,000 miles of pole line carrying about 1,800,000 miles of wire. The capitalization of the land wires, segregated, is estimated at \$150,000,000; including the ocean wires and submarine cables, the capitalization probably

would amount to \$220,000,000. So far as the public generally is concerned, the entire telegraph service is owned and operated by two companies, their lines practically duplicating each other in most sections of the country.

Telegraph facilities have not been extended to the small towns and villages along with the Government postal facilities, nor has the cost of the service been reduced in the inverse proportion that would seem to be warranted by the increasing volume of business transacted. Neither has the volume of business in this country, in proportion to the population, been as great as in countries where this facility is owned and operated governmentally. This fact unquestionably is attributable to prohibitive rates and the failure of the companies to extend the service to territory which promises small profits.

An official report of the Postmaster General of Great Britain in 1911 shows that between 1869 (the year the British Government took possession of the telegraphs) and 1900 the number of messages handled in that country increased thirteenfold, while the population increased but 30 per cent. During the same period the population of the United States increased 100 per cent, and yet the number of telegraph messages handled increased but eightfold.

In 1912 the number of messages handled in this country was barely in excess of one per capita; in New Zealand, where the telegraphs are owned and operated by the Government, the number was more than eight per capita.

Statistics show that although the United States outranks all other countries in postal transactions per capita, in respect to telegraphs it is outranked by eight other countries.

All of the important countries, the United States, Canada, and Mexico excepted, have bound themselves by an international agreement to observe uniform regulations in the administration of their telegraph service. These regulations, with a view to affording the people the most efficient service at the lowest cost, require the use of the latest and best improvements in the telegraphic art and prescribe the manner and method of receiving, transmitting, and delivering telegrams and the rates of tolls to be collected. The privately owned telegraph companies of the United States, Canada, and Mexico, to the detriment of the people, have remained outsiders to these international rules and regulations.

The United States recently became a party to an international agreement with respect to radiotelegraphy, and in this service bound itself to observe many of the rules and regulations governing the telegraph service in foreign countries. On account of the close relation which must exist between the land telegraph companies and the radio companies great confusion is now resulting from the fact that the United States is bound to observe modern rules and regulations in its radio service, but is compelled to use archaic forms and regulations in its land service because of the attitude of the commercial telegraph companies.

At the International Radio Conference at London in 1912 the delegates from the United States signed the treaty only with the humiliating condition in the protocol that, as the telegraph lines in the United States were owned by private companies, this country must abstain from all regulations concerning tariffs.

Effect of Telephone on Telegraph Service

The Postmaster General of Great Britain reported in June, 1911, that in 1907 the telegraph traffic of that country commenced to show a diminution, owing to the growing use of the telephone. The like effect in the United States is shown by statistics. The statement below shows the average daily telephone connections of the associated Bell companies between the years 1900 and 1910 and the annual number of messages transmitted by the Western Union Telegraph Co. during the same period.

	Average daily telephone con- nections of the associated Bell telephone com- panies.	Number of messages trans- mitted annually by the Western Union Telegraph Co.
1900.....	5,817,514	63,167,783
1905.....	13,912,551	67,477,320
1906.....	16,940,000	71,847,082
1907.....	18,624,000	74,804,551
1908.....	18,962,397	62,371,287
1909.....	20,342,435	68,053,439
1910.....	22,294,010	75,135,405

It will thus be seen that during the decade to which the foregoing figures relate, while the population of our country was increasing approximately 18 per cent (actually 17.8 per cent), the average daily telephone connections increased 287 per cent and the number of telegraph messages only 18 per cent. The use of

the telephone in all walks of life is steadily increasing, while the use of the telegraph is relatively stationary, and therefore decreasing.

(Statistics showing the traffic of the independent telephone companies and the Postal Telegraph Co. are not available, but investigation indicates that the figures used above represent fairly the relative importance of the telephones and telegraphs.)

The telegraph companies have already lost for the most part the short-distance business owing to the development of the toll-telephone service, and they probably will lose much of the long-distance business when the toll rates become adjusted on a cost basis. Statistics of the telegraph and telephone traffic in foreign countries show that the number of long-distance telephone communications greatly exceeds the number of telegrams. In Germany, for example, the ratio is 6 to 1. Certainly the general trend in the use of wire communication favors the telephone at the expense of the telegraph.

This was undoubtedly foreseen by the telegraph companies some years ago, for it is understood that before the acquisition of the Western Union Co. by the American Telegraph & Telephone Co. the former contemplated improvements in its system whereby the telephone would be added to the telegraph service, and this attitude on the part of the Western Union Co. was an underlying reason why its property was acquired by the Bell interests.

Telephone circuits generally consist of two wires, known as metallic circuits. It is a simple and inexpensive operation to superimpose the telegraph feature on each wire. On the other hand, the telegraph circuit in this country is commonly a single wire with earth return. A large percentage of this is iron wire, which can not be used satisfactorily for long-distance telephone purposes. Therefore, to add the telephone feature to such a circuit would necessitate not only the duplication of the entire wire equipment in order to provide the required metallic circuits, but the substitution of copper wherever iron wire is used. It will thus be seen that although it is practicable and economical to superimpose the telegraph feature on existing telephone circuits, the cost would be prohibitive to do the reverse.

On many of the long-distance telephone lines owned by the American Telegraph & Telephone Co. the telegraph feature has

been superimposed and the same wires are to-day carrying both telegraph and telephone communications simultaneously.

Telegraph Systems Inadequate for Postal Needs

The acquisition of the telegraph service of the country would necessitate taking over the duplicate plants of the two companies controlling this service with their duplicate expenses of maintenance. Unquestionably one could be made to serve the same territory. Furthermore, and of great importance, is the fact that even the entire plants of these two companies would be inadequate for the purpose of the Government, because their facilities have been extended only to profitable territory. Should the Government resume control and operate this service, it would be with the object of extending the facilities in the interest of the people and hence regardless of profit.

Assuming that the poles of the present telegraph systems would sustain the increased number of wires necessary to superimpose the telephone feature, the expense of constructing, equipping throughout with copper wire, loading the same, and providing the extra circuits required could not be estimated at less than \$75,000,000. Add this to the estimated value of the telegraphic land lines (\$150,000,000) and it will be seen that the cost would be equal to \$225,000,000, or \$25,000,000 in excess of the estimated value of the interurban and long-distance telephone network. The expense of equipping the latter system for telegraphy would involve only the cost of the instruments, and would therefore be negligible.

In view of the foregoing it is the opinion of your committee that it would be unwise from a commercial standpoint for the Government to acquire the telegraph systems of the country.

Telephone Service

The *Scientific American Reference Book* for 1913 contains statistics showing that in 1912 there were about 18,179,000 miles of telephone wire in operation in this country, serving 8,362,000 telephones. About 2,800,000 miles of this were interurban and long-distance wires and the remainder, about 15,400,000 miles, served the city and town exchanges. Over 70 per cent of this entire mileage is controlled through stock-majority ownerships

by an association known as the American Telephone & Telegraph Co. These (Bell) lines constitute about 12,421,000 miles of exchange wires and about 2,189,000 miles of toll wires. More than half of this system is underground.

Mr. Theodore N. Vail, president alike of the Western Union Telegraph Co. and the associated Bell telephone companies, in his announcement of policy states:

There is a road to every man's door; there should be a telephone to every man's house. . . . Under common control . . . it must be sufficiently strong to constitute practically one system, intercommunicating, interdependent, universal.

This statement is merely a concurrence in the accepted economic doctrine of the monopolistic tendency of the telephone business. The history of this business clearly establishes the futility of competition as a means of regulating its conduct in the interest of the people. Mr. Vail, therefore, naively agrees to the preamble of the economist and fails to follow the line of thought to its inevitable conclusion. The division of opinion between him and practically all of the economists who have given this subject their attention is upon the question whether the monopoly should be public or private. The decision of this question must rest upon which is better for the public welfare.

There is a radical difference between the policies of a public and a private monopoly, both as regards the extension of service and the fixing of rates. In the extension of service the determining factor with the Government is the needs of the people; with the private monopoly, the consideration of profit. The effect of the application of these two policies to similar public utilities is shown by comparison between the present universal extension of the mail facilities and the limited extension of the telegraph and telephone facilities. The private monopoly has no incentive to extend its facilities to unprofitable territory, but the Government must serve all the people. This universal service is accomplished by the equalization of rates. In fixing rates, the policy of this Government is to superimpose no charge for taxation, but only to see to it that the service as a whole is self-supporting. The private monopoly, on the other hand, must make a profit, and in providing for this tends to increase its rates to the highest point that will not, by so greatly restricting the volume of business, impair the aggregate profit. The effect

of the policy of private monopoly is aptly described by Prof. Holcombe in his Public Ownership of Telephones on the Continent of Europe. He states:

The forces of demand and supply will operate under a régime of monopoly, as under one of free competition, but the results will not be the same. In the latter case the interests of the monopolist will ordinarily lead him to fix his rates at a level which is intended to yield him the maximum of profit. Having adopted a tentative schedule of rates, he carefully observes the extent of the demand for his services at those rates and readjusts them, if need be, until the actual sale of his services verifies his calculations. *His purpose always is to make as large as possible the surplus that remains after deducting from his gross receipts all the expenses of rendering the service.* Consequently, under a régime of unregulated private monopoly, rates are certain to be exorbitant.'

In the telephone business, to this disadvantage from the viewpoint of the community of monopolies in general, must be added further special disadvantage. *Not only is there no protection against exorbitant rates, but also there is no security that the distribution of the total charges between the different classes of telephone users will be made on a basis calculated to promote the widest utility of the service, such as it is.* For the criterion of a sound monopolistic rate policy is not the greatest utility of the service, but the greatest profit of the monopolist. Unfortunately, the two do not coincide. There will, for example, be no incentive to extend the service to wider circles of users, unless such an extension will increase the gross receipts more than it will increase the operating expenses. The enhanced profits, therefore, which the monopolist will obtain from those users whose demand for the service is least elastic will not be put into extensions for the benefit of those whose demand is more elastic, and to whom, consequently, a small reduction in price would mean a great increase in satisfaction. Monopoly rates will not enable the community at large to derive from the telephone service the maximum of satisfaction. Therefore they are not reasonable rates.

The Bell companies, under the guidance of the American Telephone & Telegraph Co., whose president has been quoted, are working assiduously toward their admitted object—a nationwide monopoly of the telephone business. This company avails itself of every means of stressing the desirability of having this immense project under the control of one organization, and the necessity for uniform equipment, uniform engineering, and uniform operating practices is scrupulously observed. Only one make of equipment is authorized for use on all of these Bell lines—that manufactured by the Western Electric Co., one of the Bell properties.

In extending their system the Bell companies have refused to connect with other companies on the ground that this would

incorporate into their service telephones, switchboards, wires, and other apparatus not in uniformity with those used by them and that such dissimilarity of equipment would result in poor service. They have likewise refused to make such connections on the ground that one central organization *must have control* over the entire system. This attitude on the part of the Bell system has deterred the development of independent systems and has seriously crippled those which have been started.

Unquestionably, from the engineering viewpoint the attitude of the Bell companies is proper, for it is very necessary in the interest of the most efficient service that the entire telephone network be under one management. In the interest of the people, however, it is highly desirable that this management be vested in an unselfish agency like the Postal Service, where the policy would be universal extension at cost rather than limited extension at the maximum of profit.

It is needless here to enter into the manifold advantages and benefits that would accrue to the people from a universal telephone service. The telephone has now become an indispensable aid to business and a means of social intercourse to which all classes properly aspire. As it has done with the mails, it is the duty of the Government to make this facility available to all of its citizens without discrimination.

There is only one alternative: The enforcement in accordance with law of a condition of competition in the telephone and telegraph business. Without considering whether this could be done effectually in the case of an enterprise inherently so monopolistic, it is sufficient to note that while the execution of such a plan would be fraught with difficulty, its effect would not be to improve service and reduce rates, but the reverse. Competition applied to this public utility has clearly been shown to result in waste and inefficiency due to duplication. Not artificial restraint, but natural development under Government control is the true policy for the public interest.

Maps showing the routes and stations of the telephone systems and those of the Postal Service in this country are strikingly similar, except as regards extent. Hence, in the profitable territory we have three agencies—the mail, the telegraph, and the telephone—engaged in the business of transmitting intelligence, and differing only in the modes of transmission.

The Postal Service maintains about 64,000 offices and stations and employs about 290,000 persons. The telephone service maintains about 50,000 offices and employs about 200,000 persons. Were these two services merged and operated under government control it would be feasible to transfer a large number of the telephone offices to post office buildings, and thus greatly reduce the aggregate expense for quarters. Furthermore, as the majority of the telephone employees are operators who require no special technical training, the merging of the two forces would result in a material reduction in the total number of employees required. Furthermore, it is understood that the automatic and semi-automatic equipment is rapidly approaching perfection, and should this be accomplished the adoption of such equipment would bring about a still further reduction in force.

Your committee has no doubt that the institutional efficiency of the telegraph and telephone services in this country would be increased by government ownership. The statistics in the appendixes hereto show that in the United States compared with other countries the number of telephone calls per employee is relatively low, while the number of mail pieces per employee is relatively high.

The magnitude of the telephone service has led your committee to consider the feasibility of gradually acquiring the network of the country in segments, leaving the remainder to be operated commercially under licenses issued by the Postmaster General. For this purpose the property has been divided into three groups, as follows:

- (A) Long-distance and toll lines.
- (B) Exchange systems.
- (C) Farmer lines. ,

(A) Long-Distance and Toll Lines

The long-distance lines of the country are those which form the connection between important cities. They are owned and operated by the American Telegraph & Telephone Co. independently of the associated Bell companies. The failure of the independent companies to secure connection with these lines has been the principal reason for their inability to successfully compete with the Bell companies. This long-distance service was formerly kept quite separate and distinct in some places from the

service of the associated Bell companies, but today the wires usually terminate in a separate panel on a main switchboard in the Bell offices.

Few engineering difficulties would be encountered in the acquisition and operation of the long-distance lines as a separate system. They are in excellent condition and are maintained and operated by skilled employees, some of whom it might be advisable for the Government to retain, at least until the consolidation of the post and telephone offices would permit the Postmaster General to make changes and adjustments in the personnel.

The acquisition of only the long-distance lines would necessitate immediate expenditures on the part of the Government to transfer their terminals from the Bell offices to the post offices. In cities where the local commercial telephone companies own the underground conduits it would be practicable and economical for the Government to lease sufficient pairs of wires from the local companies to lead the long-distance lines to the post office switchboards. The local commercial telephone companies would run wires from their own exchanges to the government board and thus secure their outlet to neighboring cities.

The toll lines are those centering in city exchanges and running therefrom to near-by towns and villages, to distant suburbs of the cities, and to factories or even residences some distance outside of the local exchange limits. These lines are connected with a separate section of the exchange switchboard. Their acquisition by the Government would be of great value in increasing the efficiency of the long-distance system. No unusual engineering difficulties would be presented in separating these lines from the commercial exchange plant, although they are more closely related to city exchanges than are the long-distance lines.

In some instances it might be difficult to distinguish between a certain toll line in the strict sense of the term and a part of the city exchange system. Therefore, it would be well to designate as "interurban" all long-distance and toll lines, as is done abroad, and include in this class only such lines as really connect cities, towns, or distant communities. This would clearly define the scope of the transfer in the acquisition by the Government of all interurbans.

No trouble should be experienced in the villages and small towns in transferring the toll lines to the Government because the toll telephone is usually the only one in the village and the transfer would simply involve the removal of the instrument and wire from the general store to the post office.

In the community where a struggling little exchange is maintained, serving a few telephones in town and a few on near-by farms, the separation of the toll lines from the existing system would make the town exchange unprofitable and, therefore, the owners would desire to turn it also over to the Government. Provision should be made for the acquisition in such cases of these small exchanges. If the exchanges were not taken over it would be necessary to install switchboards in the post offices and lead the interurban wires thereto on poles. These small switchboards are simple and no great technical knowledge is required to operate them. The operator might perform other duties according to the number of calls per day. The lineman or inspector would keep the lines and equipment in working order and a post office employee could be easily taught to manipulate the board.

In cities where commercial companies are maintaining remunerative exchanges which involve a large number of instruments, cooperative relations would have to be maintained between the Government and the city exchanges. In such cities the toll lines, like the long-distance lines, would be connected with the post office switchboards. This may or may not involve underground conduits, according to the municipal regulations.

The superimposing of the telegraph feature on the telephone service (both long-distance and toll) might be gradually brought about at small cost. The long-distance lines of the American Telephone & Telegraph Co. can be, and in some instances actually are, used for telegraphy simultaneously with telephony. There is no reason why the toll lines should not be utilized in the same way. The addition of the telegraph feature to the interurban telephone system of the country would much more than duplicate existing commercial telegraph systems.

(B) Exchange Systems

The exchange systems are those which render exclusively local service. In the event it is deemed unwise to take over the

telephonic network in its entirety, it is the opinion of your committee that the exchange systems should not be acquired until after the acquisition of the interurban lines. Meanwhile they should be permitted to operate under licenses issued by the Postmaster General.

(C) *Farmer Lines*

Farmer lines are certain independent lines built in rural communities by private organizations, mutual associations of farmers, or by individuals for the purpose of connecting the farms with the nearest town or village. These lines involve about 600,000 miles of wire and are owned by about 19,000 different organizations, associations, or individuals. Generally they are not well built or efficiently maintained. In some localities the Bell companies have encouraged farmers to build these lines themselves, permitting them to string the wires on poles, trees, fence posts, etc., and furnishing them with connections with Bell switchboards and toll lines under the condition that they purchase Western Electric equipment. The desirability of the Government's acquiring these lines in their present condition is seriously questioned. It is believed that it would be preferable to license them under regulations prescribed by the Postmaster General.

If it be deemed wise for the Government to take over at the outset only a part of the telephone structure, this should be done with the fixed policy and expressed intention of eventually acquiring the whole commercial network.

There are two clear and sufficient reasons, both from the viewpoint of expediency and desirability, for acquiring the complete network at the outset. Universal extension of service and equitable adjustment of rates can be attained only when the entire service is under one management.

1. A movement toward the acquisition of only a part of the plant—the toll lines, for example—would meet with all the opposition the Bell companies could bring forth, and it would be supported by the strongest possible arguments—the engineering and economic principles referred to. The toll lines and the exchange service are so intimately associated that in many places the same employees serve both. To separate these services would

be uneconomical. Furthermore, the separation of the toll and long-distance lines from the exchange service would entail an immediate expenditure for new switchboards, cables, poles, etc.

2. The operation of only a part of the plant is fraught with the obstacles encountered by the British Government when it endeavored to do this. The private companies, realizing that it would be only a question of time when the entire plant would become Government property, would assume an apathetic attitude and allow their plants to run down and become inefficient. Or they might assume a hostile attitude and use every possible means of preventing the efficient conduct of the service in order to discredit the postal management. This attitude could well be assumed even while operating under licenses issued by the Postmaster General.

Cost and Payment

According to the best available data the capitalization of the long-distance and toll lines represents approximately \$200,000,000 and the capitalization of the entire commercial network (exchange service, toll, and long-distance lines) approximately \$900,000,000. The cost to the Government would be less than the appraised value, since it would be undesirable for the Government to purchase the real-estate holdings of the telephone companies, such as exchange and office buildings, etc. Sufficient space in these buildings for the exchanges could be leased until accommodations could be provided in the post offices and stations.

While it would be necessary to acquire title and possession of the network by a single process of statutory appropriation, and on the same day, it by no means follows that payment for the properties would or could be made in the same total or single manner. There are altogether some three thousand companies or distinct legal proprietorships of the telephone service. Even the Bell companies, whose holdings comprise approximately three-fourths of the entire network of the country, number more than 200. Therefore, as many distinct payments would be made as there are different proprietorships. Moreover, these payments would extend over a sufficient period in which to make the appraisals and enable the courts to adjust such legal questions as may arise. The payments would be distributed throughout a pe-

riod of several years, and thus ample time and opportunity to market the bonds would seem to be assured.

It is not believed that any serious difficulty would be encountered in financing the proposition, as the extinction of the securities of the superseded companies by Government acquisition would be likely to create a demand for an equal amount of other securities, and it would be but natural that a large amount of the bonds issued from time to time by the Government would be purchased by the former holders of telephone securities. In this connection attention is directed to the financing of the United States Steel Co., the Panama Canal, and the acquisition of railways by Japan and by Switzerland.

The data assembled by the committee in the course of its investigation, which constituted the basis of its study and conclusions, are set forth in Appendixes A to H, inclusive, that accompany and are hereby made a part of this report.

Recommendations

Your committee has reached the conclusion that the only way to afford to the people the complete and modern postal facilities that the Constitution makes it the duty of the Government to provide is to put into effect the following recommendations:

1. That Congress declare a Government monopoly over all telegraph, telephone, and radio communication and such other means for the transmission of intelligence as may hereafter develop.
2. That Congress acquire by purchase at this time at appraised value the commercial telephone network, except the farmer lines.
3. That Congress authorize the Postmaster General to issue, in his discretion and under such regulations as he may prescribe, revocable licenses for the operation, by private individuals, associations, companies, and corporations, of the telegraph service and such parts of the telephone service as may not be acquired by the Government.

Respectfully submitted.

DANIEL C. ROPER,
M. O. CHANCE,
J. C. KOONS,
Committee.

[Abridged from Appendix A.]

The electrical discoveries and inventions of Morse and others were first practically applied to the transmission of intelligence by the Government. On March 3, 1843, Congress appropriated \$30,000 to test the practicability of the electromagnetic telegraph. A line was stretched under the direction of Prof. Morse between Washington and Baltimore, and on May 24, 1844, communication was opened. Three days later the proceedings of the Democratic convention, sitting at Baltimore, was reported in Washington by means of an instrument installed in the east end of the Capitol.

The postal nature of the telegraph was from the beginning clearly apprehended. In the appropriation act of August 10, 1846, it is provided that "the proceeds of the telegraph between Washington city and Baltimore be, and the same are hereby, directed to be placed in the Treasury of the United States for the benefit of the Post Office Department in the same manner as other revenues from postage."

Henry Clay advocated Government ownership of the telegraph in 1844, saying: "It is quite manifest it is destined to exert great influence on the business affairs of society. In the hands of private individuals they will be able to monopolize intelligence and perform the greatest operations in commerce and other departments of business. I think such an engine should be exclusively under the control of the Government."

Postmaster General, Hon. Cave Johnson, in his annual report for the fiscal year 1845 urged that the control of so valuable an agency for the diffusion of intelligence should be left in the hands of the Government, where its operation would be conducted for the benefit of the public. Unfortunately, he was unable to foresee that such operation would ever become a source of revenue rather than of expense, and his pessimism regarding the financial phase of the telegraphic service undoubtedly had much to do with defeating the very recommendation that he urged on the ground of public policy.

Prof. Morse himself was impressed by the propriety of government ownership of his invention and offered his patent to the Government for \$100,000, saying that it was "an engine for good or evil, which all opinions seem to concur in desiring to have subject to the control of the Government, rather than have it in

the hands of private individuals or associations." It is to be regretted that this proposal did not receive favorable consideration at the hands of Congress, but his own right to the exclusive telegraph idea was disputed by other inventors and was to be the subject of protracted litigation, so that the purchase of his patent did not present to Congress the clear-cut alternative that was to be desired in expending a large amount of Government funds for an intangible idea the value of which was at that time problematical.

Congress Authorizes Sale of Government Telegraph: 1846

The telegraph service between Washington and Baltimore was not self-supporting, and appropriations for its maintenance were made but grudgingly by Congress. Every attempt to secure legislation authorizing the building of additional lines failed.

In his report for the fiscal year ended June 30, 1846, Postmaster General Johnson reiterated his contention for a government-owned telegraph.

Nothing came of all these recommendations, however, and on March 4, 1847, the Postmaster General, confronted by a depressing condition of the postal finances and despairing of legislative support in prosecuting the enterprise as a part of the Postal Service, effected the sale of the Government line.

This was the period of the Mexican War and of intense political rivalry and sectional controversy. It was also a period of unparalleled expansion. In the midst of a host of seemingly greater issues Congress neglected the telegraph.

But if the Government was slow to enter into the new enterprise, promoters and speculators eagerly seized upon the opportunity and organized companies for the extension of telegraphic communication. Questionable financial methods and unsubstantial building were characteristic of many of these companies, their object being rather to sell stock than to perform any real service to the public.

By 1866 these early "wildcat" concerns had been absorbed by the Western Union Telegraph Co., and an object lesson of the monopolistic tendency of the business was clearly presented. In that year Congress enacted the legislation in regard to the telegraph that is still in force.

Report of Postmaster General Randall: 1867

Postmaster General Randall, in his report for the fiscal year ended June 30, 1867, referred to the fact that the subject of connecting the telegraphic system of the country with the Postal Service had attracted public attention, and that it had recently transpired that the telegraphic system of Great Britain had been put in charge of the British Post Office Department. [He stated] that it was a matter of very great importance which ought to be thoroughly investigated by Congress.

Reports of Postmaster General Creswell: 1869 and 1871

In his report for the fiscal year 1869 Postmaster General Creswell stated that he should defer making any recommendation concerning it until a greater degree of efficiency could be attained in the Postal Service as then constituted.

Mr. Creswell again refers to the subject in his report for the fiscal year ended June 30, 1871, and after discussing the regulation and control or the ownership and management of telegraph systems in foreign countries, particularly in Great Britain, which became effective February 5, 1870, he makes the following comment:

These facts, all tending with overwhelming force in one direction, demonstrate conclusively the utility of the postal telegraph for both Government and people.

In transmitting to Congress this report of the Postmaster General, President Grant wrote:

The suggestions of the Postmaster General for improvements in the department presided over by him are earnestly recommended to your special attention; especially do I recommend favorable consideration of the plan for uniting the telegraphic system of the United States with the postal system.

"Washburn" and "Hubbard": Plans Before Congress: 1871-2

In the meantime the 5-year period stipulated in the act of 1866 had expired and two distinct propositions were being urged in Congress. The first of these, indorsed by the President and the Postmaster General, was originated by Hon. C. C. Washburn, of Wisconsin, and was twice submitted by him in the form of a bill. Mr. Washburn's plan contemplated that the Govern-

ment should take possession and own the entire telegraph system of the country and operate it as part of the postal system.

The second proposition was known as the "Hubbard" plan, from its having been originated by Gardiner G. Hubbard, of Boston. The plan proposed the incorporation of a private company to which should be granted special privileges by the Government, in return for which it should contract with the Post Office Department for the transaction of the telegraphic business of the country at certain specified rates.

In the report of Postmaster General Creswell for the year 1872 he deals at length with the subject of a Government telegraph.

After comment on the rivalry of the telegraph with the mail, the defects and abuses of the telegraph under corporate management and oppressive tariffs, the report then refers to certain abuses of the system, such as the improper use of telegraphic information, free messages, favoritism to customers, and the oppressive influence of telegraph companies upon newspapers.

Report of Postmaster General Creswell: 1873

Postmaster General Creswell, in his report for the year 1873, again reiterates his views on a postal telegraph.

The matter of Government control of the telegraph system of the country does not appear to have been again discussed in reports of the department until the report of Postmaster General Maynard for the year 1880. He refers to a visit to the British post office and to the success of the operation of the telegraph system by the postal service of that country, and inquires—

Is it not time for us to renew the inquiry whether it is wise to leave this important instrument of correspondence in charge of corporations whose primary object is gain to the managers and stockholders, and the convenience of the public secondary only?

In the report of the department for the fiscal year ended June 30, 1882, Mr. Maynard's successor, Mr. Howe, states that he is forced to the conclusion "that the time has fully come" when the telegraph and postal service should be embraced under one management.

One of many bills introduced from time to time in Congress in the attempt to overcome the legislative inertia on the subject

of postal telegraph was that presented on January 14, 1884, by Senator Hill of Colorado. Senator Hill's bill provided for the establishment of a system of postal telegraphs in the United States, and in supporting it he said that Governments everywhere had undertaken the management of the telegraph business.

He pointed his opinion that government supervision of the telegraph would result in great benefits by a reference to the enormous increase in the postal business in this country and in Great Britain after a reduction in the rate of postage and the consequent quickening of commerce and business as well as the brightening of the ties of social life.

The attempt of Senator Hill to secure the desired legislation was unsuccessful, as have been some two dozen similar attempts since 1871. At least three-fourths of these bills have been favorably reported on by House and Senate committees.

In 1889 Postmaster General Wanamaker, in reporting on an effort to secure reduced telegraph rates for the Government, says:

The idea was to connect the telegraph wires with all the free-delivery offices and to take messages at or about one-half the current rates, delivering by letter carriers by regular deliveries.

With no other liability for telegraphic messages than that for the ordinary mail; with no necessity for booking messages, or auditing and keeping cash accounts; by using postage stamps in payment as for letter postage, the cost of the service would be reduced and the rate could be fairly reduced on telegraphic messages. The delivery of such telegraphic messages in another city on the day they originated seemed to me to offer an accommodation that vast numbers of people would avail themselves of, especially for communications of a social and family nature, if the service could be performed at lower rates. The equipment of the post offices seemed to be all ready to do this cheaper service.

In 1890, Mr. Wanamaker again urges the control of the telegraph by the Post Office Department through contracting with telegraph companies to furnish lines, instruments, and operators, and to transmit messages at rates fixed by the Government, all of which would go to the contracting company except 2 cents per message, which would be retained by the Post Office Department to cover the expense of collecting and distributing. He argues that the people have the right to the use of the plant of the Postal Service as a means of reducing the cost of telegraphic correspondence and for the instant transmission of postal money orders.

Taking up this subject again in 1891, Mr. Wanamaker urges government control of the telephone system, as well as the telegraph system, and deals particularly with reference to the objection that such course is unconstitutional.

In the concluding report of his administration as Postmaster General for the year ended June 30, 1892, Mr. Wanamaker again urges the adoption of his plan to contract with some telegraph company to connect post offices by telegraph, commencing with the most important offices and proceeding gradually in the order of probable usefulness, reducing the cost of telegrams by the use of post office buildings, the use of telegraph stamps, the collection of messages in street or house boxes and the delivery by carriers, contracting with the company to perform service with its own operators for a fixed sum per message which the department would charge the people, adding a 1-cent stamp for local delivery and a special-delivery stamp when instant delivery is desired: He advances no new argument.

Mr. Wanamaker was the first Postmaster General to advocate government ownership of the telephone service.

The disastrous financial panic of 1893 and the consequent depression was reflected the following year in the annual report of Postmaster General Bissell, who took a conservative attitude and deprecated not only the acquisition by the Government of the telegraph service but *any* new departure in the extension of the Postal Service and argued against government ownership.

*Synopsis of Argument Prepared by Prof. Frank Parsons
[1901-1903]*

Henry Clay, Charles Sumner, Hannibal Hamlin, Gen. Grant, Senators Edmunds, Dawes, Chandler, and N. P. Hill, Gen. B. F. Butler, John Davis, Postmaster Generals Johnson, Randall, Maynard, Howe, Creswell, and Wanamaker, Prof. Morse, the inventor of the telegraph; Cyrus W. Field, the founder of the Atlantic cable and a director in the Western Union Co.; James Gordon Bennett, Prof. Ely, Lyman Abbott, B. O. Flower, Judge Clark, Henry D. Lloyd, Dr. Taylor, T. V. Powderly, Samuel Gompers, Marion Butler, and other eminent men in every walk of life have championed government ownership in America. Legislatures, city councils, boards of trade, chambers of com-

merce, and labor organizations; numerous newspapers, and the Prohibitionist and Populist Parties, favor it. Opposition is confined to the capitalists controlling the present private system of telegraphy. Senator Edmunds in 1883 introduced a bill to establish a postal telegraph; another in 1885, and another in 1887. Senator Dawes from 1873 to 1888 introduced four bills to provide for the transmission of correspondence by telegraph. Altogether more than 70 bills have been introduced into Congress for the purpose of establishing a postal telegraph. Eighteen times committees of the House and Senate have reported on the question, sixteen times favorably and twice against. Of the two adverse reports, one was a 2-page document, mildly expressing the opinion of the committee that the telegraph monopoly should be regulated, but that public ownership was not best because of the increase of patronage and because the committee thought it would cost more to run it under governmental control. No evidence was taken, no investigation was made. The other adverse report was made in 1869, upon the ground that the five years of security given to the companies by the law of 1866 had not elapsed.

A large part of the people have no facilities for transmitting telegraph messages under the present private ownership plan. The advantages of a change are apparent when it is shown that the Western Union has 21,000 offices and the post office 70,000.

Telegraph rates in this country are 25 cents to \$1 for 10 words and 2 to 7 cents for each word in addition; the night rates are somewhat less. In Europe the usual rate is about 10 cents for 20 words and one-half a cent to a cent for each further word. The figures submitted by the Western Union to show that the distances in this country are much greater than in Europe were greatly exaggerated.

The Western Union claims that wages are much higher in this country than in Europe. On data furnished it appears that the average salary of operators in this country does not exceed \$333, while the average in Europe is \$320, but in many cases, Great Britain and France, for instance, the average salary of the operators is much greater than in this country. Besides, according to the Western Union, the operators in this country do twice as much work as European operators.

In attempting to justify its charges the Western Union claims

that Europe operates the telegraph service at a loss. On the contrary, France, England, Switzerland, Sweden, Prussia, Belgium, and other countries make a profit, and Europe as a whole does the same. The Western Union ciphered out a loss for Europe by adding the cost of construction into the operating expenses. Rates are higher here because private enterprise aims at dividends, while public enterprise is satisfied to serve the people at about cost. In Great Britain the 18,000,000 messages sent in 1873 under public ownership cost the public just what 9,000,000 would have cost under the displaced private ownership. In the spring of 1895, Mr. Wanamaker stated that he thought a uniform 10-cent rate for 20 words, regardless of distance, could be established and yet leave the system self-sustaining. He based his opinion on the rates before the Western Union absorbed other companies and shut off competition.

The present telegraphic system in America is indicted for its illtreatment of employees and a general abuse of the employing power—child labor; overworked operators; long hours and small pay for those who do the work; less wages to women than to men for the same work; favoritism and unjust distinctions between men in the same service; a settled policy of reducing wages and increasing work; denial of the right of petition, the right of organization, and the right to consideration because of long and faithful service. In 1890 the evidence was that the average pay of telegraph operators was \$40 to \$45 a month, that girls were employed in some instances as low as \$12 to \$15 a month, and quite a number were paid no more than \$20 to \$35. Abuse of the employing power such as listed above results in strikes and poor service, manifested in slowness, inaccuracy, insufficient facilities, failure to guard the secrecy of messages, etc. Examples are cited illustrative of these features. The Western Union Co. is charged with "discrimination between the messages of different customers, both as to rates and order of transmission." Instances are given. Monopoly of the news service results from private ownership of the telegraph. Reference is made to the censorship of the Associated Press under its arrangement with the Western Union.

Misgovernment and political corruption are evils to which the private telegraph contributes, through a distribution of franks to Government officials, both State and Federal.

Another evil of private ownership of the telegraph is the dangerous concentration of power and wealth in the hands of a few irresponsible persons. The Western Union in its compact with the newspapers reserves to itself the exclusive right of furnishing commercial and financial news to individuals and associations.

In the hands of private individuals the telegraph enables them to monopolize intelligence and to perform the greatest operations in commerce and other departments of business.

The present telegraph system is a menace to the national strength in time of war. The telegraph is one of the most important instruments of war and the Nation ought to own the system on military grounds, if there were no other reason.

Private monopoly means taxation without representation. The monopolist is able to charge more than his service would be worth in a fair competitive market. Government is a union of all for the benefit of all.

Economy, good service, and general satisfaction have characterized the national telegraph service abroad, while in this country the opposite is true.

New York capitalists were eager to contract with the Government on the Wanamaker basis or the basis of a uniform 25-cent rate regardless of distance. This plan avoids the objections usually urged against a public telegraph. It would not increase the Government patronage, nor require any public expenditure, nor limit private enterprise, and yet it would render the country an inestimable service by cheapening the telegraph and making it more accessible to the people. Its disadvantages are that it still leaves the rates higher than need be in order to give the private capitalists the profit they demand; that although the business would be essentially a public one, carried on in the Post Office and largely by means of its labor and capital, yet the profit would chiefly go to private parties; that it would extend the pernicious contract system, which is far more liable to abuse than the patronage; that it does not eliminate the antagonism of interest between the telegraph management and the public; that it does not diminish but largely increases the telegraph stock to be gambled with and manipulated; that it leaves the telegraph workers to the mercy of corporate greed, etc.

Another way of handling the telegraph question would be to lease lines from private companies and operate them by the postal force. This would be better than the first plan, with a good civil service, since it accomplishes the same extension of facilities and still greater reduction of rates. The objections are that it would still pay out a considerable rental profit which had better stay with the people and it would retain the contract method to some extent.

A third plan would be for the Government to buy existing lines and connect them with the Post Office system. One trouble with this plan is that existing lines are in large part of very inferior quality and the people would probably have to pay five or six times the value of the telegraph. In a speech on the floor of the Senate, January 20, 1883, Senator Edmunds stated that he was not in favor of the Government purchasing existing lines, but that he favored the building of its own lines by the Government. Senator John Sherman, of Ohio, expressed himself in a similar manner, and in 1888 the Committee on Commerce stated that it was its belief that the Government should construct its own lines.

A fourth plan would be for the Government to ask private parties to build the lines, or supply the money for building them, on condition that said parties should receive a specified interest on their capital; that all profits beyond said interest should go toward paying off the principal, and that when it should be entirely paid the lines should revert to the Government free of debt—a sort of building loan association plan.

A fifth plan would be for the Nation to build a telegraph system for itself. It may first build lines connecting the great centers of population, and the revenue thus obtained from year to year could be used to extend the lines, or it may establish a comprehensive plant at the start. The construction and maintenance of the lines could be placed in charge of the Engineer Corps of the Army. The rank and file of the Army might also supply a part of the ordinary labor required for construction and maintenance.

Superintendence of the office work could be confided to the postal officers, with very little addition to the force. Mr. Wanamaker stated that in three-fourths of the post offices no addi-

tional attendant would be needed. In England the regular postal staff does the telegraphing in all the small offices. One-half of the regular staff in Belgium are telegraph operators.

A large saving would be made in rentals and the cost of heat and light. The Government would not have to pay dividends on watered stock or on the real investment. Costs of litigation, counsel fees, lobby expenses, and big salaries would be saved. There would be no building of useless lines nor wastes of competitive telegraphy, the money abstracted from the people by the discriminative use of the telegraph for speculative purposes would remain in their pockets, and the cheapening of communication would bring the whole people closer together, give them a better understanding of the markets, and develop the business transactions of the continent.

Postal Act of 1901

The postal act of January 22, 1901, contained the following provision :

The Postmaster General is directed, if he has sufficient available information to enable him to do so, to report to Congress the probable cost of connecting a telegraph and telephone system with the postal service by some feasible plan.

This direction of Congress does not appear to have been complied with.

Reports of Postmaster General Payne, Cortelyou, and Hitchcock

The treatment accorded to the subjects of postal telegraph and postal telephones in the annual reports of Postmasters General Payne, Cortelyou, and Hitchcock are as follows:

The extension of the rural free-delivery service and the consequent increase in the use of the mails by the patrons residing along the rural routes, together with the extension of the telephone service into the farming districts of the country, has suggested the propriety of extending the privilege of the special delivery of such letters, or the contents thereof, by means of the telephone.

The telegraph lines in the United States should be made a part of the postal service and operated in conjunction with the mail service. Such a consolidation would unquestionably result in important economies and permit the adoption of lower telegraph rates.

Report of Postmaster General Burleson: 1913

Postmaster General Burleson has included in the Annual Report of the Postmaster General for the fiscal year ended June 30, 1913, the statement:

A study of the constitutional purposes of the postal establishment leads to the conviction that the Post Office Department should have control over all means of the communication of intelligence.

Present Situation

Government ownership of the electrical means of transmitting intelligence is brought to the attention of the American people of 1913 with the indorsement of nearly every Postmaster General since the Civil War, with a score of favorable reports by committees of Congress, and by the example of practically every other nation of the civilized world. More than 70 bills have been introduced in Congress to accomplish it. Meanwhile the private operation of the telegraphic and telephonic facilities has resulted in a virtual monopoly by which the people are annually taxed vast sums for which they receive no adequate return.

Annual Report of Postmaster General Albert Sidney Burleson, 1913.

The last actual postal surplus was announced by Postmaster General Gresham 30 years ago, when fair account was taken by him in the financial statement of the department of outstanding obligations. The practice of reporting outstanding obligations was continued by a number of his successors. In recent years, however, Postmasters General have stated the persistently recurring postal deficit in terms of the excess of audited expenditures over audited revenues.

By the use of this faulty method a surplus of \$219,118.12 was shown in the annual report of the Department for the fiscal year 1911, in which the claim was advanced that the service had finally been made self-supporting. Taking into account the outstanding obligations for that year, which were not reported, there was in reality a deficit of approximately \$732,301.90. The actual deficiency for the year 1911, based on payments on account of that year which were made up to June 30, 1913, was \$720,768.63, and obligations are still outstanding amounting to approximately \$11,533.27.

It is gratifying to note that on this basis [reporting of outstanding accounts and obligations] the total expenses of maintaining the postal service for the fiscal year ended June 30, 1913, is found to be exceeded by the revenues for the same period, that there is an actual surplus of \$3,841,906.78, and that the postal service is now for the first time since 1883 self-supporting.

The dominant policy of the present administration will be to conduct the postal service for the convenience of the public and not for profit. Its controlling purpose will be to promote efficiency by the complete standardization of the service, which will be attained by harmonizing equipment, adjusting the personnel, and securing the greatest possible cooperation in every quarter.

The prime consideration in perfecting the personnel of the postal service shall be to recognize efficiency and to eliminate partisanship. It is the earnest hope that ultimately all positions will be covered under the classified civil service and that merit and faithfulness will be the sole consideration in making appointments as well as promotions.

The same reasons that led to the adoption of the constitutional provision for a Government monopoly over the receipt, transmission and delivery of mail matter make it improper to operate this service in accordance with policies characteristic of private enterprise. There is no incentive to private enterprise to extend service unless such extension will increase gross receipts in greater proportion than expenses. Therefore, successful commercial organizations are not proper models for the Post Office Department, except that the same modern business-like methods may in some instances be applicable to both. In the extension of service and in the imposition of charges the Government must be guided not by the consideration of profit but by the needs of the people, who have a right to expect the most efficient postal service administered in the most economical manner possible and made available to them at rates involving, for the service as a whole, no element of taxation. The service should be extended, with due regard for the exigencies of public finance, wherever its benefits, commercial and social, warrant the expenditure necessary, irrespective of whether or not the revenue from each extension will defray the cost thereof.

The function of the Post Office Department is to serve the public, and it should not attempt profit making. It is expected

that after the allowance of proper compensation to railroads for all service rendered there will come annually hereafter as the result of the development of the parcel-post service an increasing surplus. It should be the policy of the department not to become a revenue producer for the Government, but from time to time to absorb this surplus by reducing the cost of the service, increasing its efficiency, and enlarging the means of communication between our people. The indication of largely increased postal revenues justifies a serious consideration at this time of the subject of adding the telegraph and telephone as a part of our postal service.

Postal Telegraphs and Telephones

A study of the constitutional purposes of the postal establishment leads to the conviction that the Post Office Department should have control over all means of the communication of intelligence. The first telegraph line in this country was maintained and operated as a part of the postal service, and it is to be regretted that Congress saw fit to relinquish this facility to private enterprise. The monopolistic nature of the telegraph business makes it of vital importance to the people that it be conducted by unselfish interests, and this can be accomplished only through Government ownership.

The act of July 24, 1866, providing for the government acquisition of the telegraph lines upon payment of an appraised valuation and the act of 1902 directing the Postmaster General "to report to Congress the probable cost of connecting a telegraph and telephone system with the postal service by some feasible plan" are evidences of the policy of this Government ultimately to acquire and operate these electrical means of communication as postal facilities, as is done by all the principal nations, the United States alone excepted.

The successful operation of the parcel post has demonstrated the capacity of the Government to conduct the public utilities which fall properly within the postal provision of the Constitution.

Every argument in favor of the government ownership of telegraph lines may be advanced with equal logic and force in favor of the government ownership of telephone lines. It has been competently decided that a telephone message and a telegram are the same within the meaning of the laws governing the

telegraph service, and therefore it is believed that the statute enabling the Government to acquire, upon the payment of an appraised valuation, the telegraph lines of the country, will enable the Government to acquire the telephonic network of the country. While it is true that the telephone companies have not complied with the requirements of section 5267, Revised Statutes, this can not be held to nullify the intent of the law, since the nonperformance on the part of the Government of any of its constitutional privileges in nowise surrenders the right to exercise these privileges whenever the best interests of the Nation demand.

Since June last the department has been conducting a careful investigation to determine the desirability and practicability of extending the government ownership and control of means of communication, with a view to the acquisition by the Government of the telegraph and telephone facilities, to be operated as an adjunct to the postal service. The Postmaster General is now engaged in reviewing the data collected and later, if desired, will submit same to the appropriate committees of Congress for their consideration.

Since the first authorization of experimental aerial mail service in 1911 the department has given like permission in 54 instances. A considerable number of pieces of mail has been carried in this manner, but without expense to the department. In connection with the transportation service an item has been included in the 1915 estimates for \$50,000 to provide for an experimental service. It is believed that there are sections of the country where, because of topographical conditions, this class of service might be advantageously employed in some cases.

On June 30 the Postal Savings System was in operation at 12,158 offices, of which 8,227 were of the presidential grade and 3,931 of the fourth class. Savings facilities have also been extended to 662 branches and stations, making a total of 12,820 depositories in operation on that date. Since June 30 the service has been extended to 210 presidential offices not theretofore designated as depositories, completing the installation of savings facilities at all presidential post offices, except those in the Hawaiian Islands and in Porto Rico, to which the service will soon be extended.

Under the law which confers large powers on the Postmaster General, the parcel-post service will be gradually developed and

to such an extent that the department can be maintained on a self-supporting basis. The prodigious growth of this service, which will continue at an increasing rate as all the people for whose benefit it was established accustom themselves to its use, will so increase revenues that from time to time further reduction of rates may be had and additional increases of weight limit of parcels authorized.

Although there has been some agitation in recent years for the elimination of the franking privilege and the adoption of official stamps and envelopes in its stead, with a view to conserving the postal revenues by throwing the light of publicity on the free use of the mails by those to whom that privilege is accorded, it is not believed that there is such abuse of the franking privilege as would justify incurring the expense of manufacturing and distributing such envelopes and stamps.

The amount of franked matter carried in the mails during the course of a year is very great, but it should be borne in mind that the constant demands made upon Members of Congress in respect to official matters require a vast amount of correspondence.

World's Work. 16: 10651-8. September, 1908.

Our Government's Wide-Spread Socialistic Activities. John Martin.

He [Uncle Sam] has proved his ability to construct and operate telegraph, cable, telephone, railroad, and steamship lines with business efficiency. And by the maintenance of cold-storage plants, hospitals, etc., he has demonstrated his belief that he owes a debt of social service to his citizens outside the States.

The United States Government owns and operates one of the longest and most intricate commercial cable and telegraph systems in the world—the Washington-Alaskan system, which joins the cities of the United States and the world in general with the towns and cities of the Alaskan coast, the Yukon Valley, and the region around the Bering Straits. This Government cable would reach from Newfoundland to the Irish Coast, and the land lines would stretch from Washington to Mexico. The Federal Government built the northern part of this line through a wilderness, wild and trackless, and laid down the thousand miles of ocean

cable between Sitka and Seattle more cheaply than any of the commercial cables were established by private capital. When this cable was ground in two by icebergs, the gap was bridged by a wireless system which is at present the only one of its kind, operated as a part of a telegraph system and engaged in commercial business. After three years of operation, this cable line is worth more than the United States paid for it; the business done over it for commercial firms amounts to \$200,000 a year; the rates are lower than those charged by any private company; and no error has yet been charged in any of the multiform commercial codes used.

Cable and telegraph lines have also been officially built and operated in the Philippines. One section was put through a piece of country so difficult to traverse that every pioneer lineman who made the round had to be carried to a hospital. At present, 6,322 miles of land lines and 1,437 miles of cable, besides twenty-four telephone systems, are operated in the Philippine Archipelago at rates which are fixed according to the postal system, irrespective of distances.

In Porto Rico, the Government is operating telegraph and telephone lines so profitably that a few months ago the price of telegrams was reduced. The smallest towns in the most remote part of the Islands are connected with telegraph stations by the telephone.

In the Philippines, every post office is a postal savings-bank. Deposits, however, large or small, are received at these banks and may be withdrawn from any other Government bank.

**Monthly Consular and Trade Reports. No. 332:161-2.
May, 1908.**

Swiss Telegraph and Telephone Conducted by the Government.

R. H. Mansfield.

In stating that the Swiss Government owns and operates all the telegraph and telephone lines in the Confederation, Consul R. E. Mansfield, of Lucerne, furnishes the following details as to their management:

The telegraph and telephone service extends to nearly every town and village in the country, and every railway station is supplied with both systems. The service is good and the rates

low. They are operated in connection with the postal service, every post office being provided with telegraphic facilities, and practically all of them with public telephones.

Distances in Switzerland being short, the service prompt, and the rates low, the telegraph and telephones are liberally patronized. Long-distance connections are made with all the local or urban telephone lines, enabling patrons to communicate with all cities and towns in the country. There are also international connections with all the countries bordering on Swiss territory.

A feature of the Swiss telephone service is that in addition to owning and operating all the lines, the Government manufactures all the instruments used, makes the insulations, and controls the business absolutely.

Length of Lines, Revenue, and Profit

The total length of telephone lines in Switzerland is 10,548 miles. The annual rental charge for offices, business houses, and residences is \$12.45 per year. An additional charge of one cent is made for each call in the town. For interurban or long-distance calls the rate is 2 to 14 cents for three minutes, according to distance, 14 cents being the maximum rate for any distance in the country.

The number of telephone subscribers in 1906 was 53,711. During the year there were 32,071,177 local, 7,251,193 interurban, and 299,209 international calls over the government telephones. The revenue from all classes of calls for 1906 was \$829,732; income from rent on 53,711 telephones, \$668,702. Total, \$1,498,-434.

The total length of telegraph lines in Switzerland is 66,683 miles. The total number of telegrams transmitted in 1906 was 4,918,679, of which 2,339,956 were international and 1,698,838 local. The total revenue from telegrams for the year was \$1,596,664.

There is a government tax of 30 centimes, equal to a fraction under 6 cents American money, on each telegram sent. In addition to this charge there is a universal rate of one-half cent a word throughout the country, distance not being taken into consideration. A telegram of ten words costs only 11 cents. The international rate is 30 cents per word to New York, 2 cents to France, Germany, Italy, and Austria, 5 cents to Spain, 6 cents to England, and 9 cents to Russia. In addition to the foregoing

there is a government tax of 10 cents on each international telegram or cable.

The total income from telephone and telegraph service for 1906 was \$3,095,098; expense, \$2,231,217; profit to the Government, \$863,881. The telegraph and telephone service, like the Government railways and parcels post, and economically administered, the object being to render the best service possible at the lowest possible cost to the people.

Harper's Weekly. 57: 25. March 15, 1913.

Control of Wireless.

At midnight on December 12, 1912, wireless-telegraph operation in the United States, by virtue of a set of regulations recently passed by Congress covering domestic and interstate stations, passed absolutely into the control of the Government. The enforcement of the radiographic act is placed in the hands of the Secretary of Commerce and Labor. While it is realized that most wireless operators are not likely to interfere maliciously with important messages, the idea of the regulations is to make it impossible for those who are less considerate to interfere without becoming subject to severe penalties. The violation of the principal regulations is made a misdemeanor punishable with a fine of \$500 or imprisonment for one year.

Such interference has been a grave menace to the system ever since the installation of radiographic communication, and the necessity for some sort of authoritative supervision over it has been recognized from the beginning. Late disasters at sea emphasized this necessity, and resulted in Congressional action. The London International Conference last June, to which the United States was one of the signatories, fixed the status of the stations doing an international business, and it was on this basis that the regulations were enacted by Congress.

The regulations fix the wave lengths of the licensed stations and provide that they shall at all times be in charge of a licensed operator. There are regular license forms both for stations and for operators personally. To insure the undisturbed use of the air for government stations the outside stations have to "keep out" for the first fifteen minutes of each hour, during which time

the government stations can send without interference. All licensed shore stations also are required to listen for not less than two minutes at intervals to catch any distress signals that may be going. In case a distress signal is sent from any vessel, then all stations except that to which the call is addressed must keep out until all business in connection with such a call is finished. Any station sending out a fraudulent distress call is guilty of a misdemeanor.

There are about one thousand ships under the government regulations that are compelled to carry wireless, and provision is made for an auxiliary engine to furnish power to the ship's radio apparatus in case of accident to the regular machinery of the vessel. Provision is also made for ships within interference distance of a government shore station to operate with reduced electrical power, except in case of distress, when they can use any power or any wave length. The Department of Commerce and Labor has so far granted about 350 licenses to operators, and this number will steadily increase.

British Post Office Electrical Engineers' Journal. July 1, 1911.

Telephones in England and the U. S. A. T. F. Purves.

So far as telephones at least are concerned, we in this country have always freely admitted the immense contributions to the development of the art which have come to us from across the Atlantic. America was the cradle of the telephone, and has been, from the first, peculiarly its home. Its telephone engineers have led the world. The multiple switchboard, which first enabled large numbers of lines to be handled in one exchange, the common battery lamp signalling system, which greatly improved the service and reduced its working costs, and the automatic or machine systems of telephony, which aim at the elimination of the human agency of the operator, are all the product of American brains, and many of the original and most notable pioneers of these developments are still in active and responsible control.

But I would not give all the credit for the wonderful development which has scattered eight millions of telephones up and down the United States to their engineers and commercial managers. The American public has taken to the telephone as a duck takes to water, and its insistent demand has been a continuous

spur to those in whose hands the provision of the service has rested. Its progress has been greatly helped by the absence of many of the facilities for cheap and rapid postal and telegraph communication, to which we on this side are so accustomed that we have ceased to notice them. The post is uncertain, and in country districts people have sometimes to travel a long way to post or obtain their letters. It is slow compared with ours, especially for internal city communications. The telegraph has been costly and poorly developed. Even at the present day there is a vast rural community which it does not serve at all.

I think the tendency to the erection of tremendously high buildings in American cities has also helped the telephone. When a man's office is perched, it may be, on the twentieth or thirtieth floor, he wants to do as much business as possible without going outside, and the telephone is a *sine qua non*.

But outside these considerations I think the telephone is better suited to American business methods than to English. The American makes important contracts by word of mouth and is quite contented to do much of his business by telephone. He has recognized it as the greatest time-saver ever invented, and as a business-bringer that he cannot afford to be without either in his office or his private house. Consequently he sees that he gets it, and he doesn't mind paying for it. When the same attitude becomes general on this side of the water we are not likely to hear so much of England's backwardness in telephone development.

The number of "Independent" companies runs into hundreds. Some of them are large and comparable with the Bell companies, but for the most part they are quite small. The operations of the small companies are, in many cases, confined to a single town. They came into existence as the result of local enterprise, on the expiration of the Bell patents several years ago, with the idea of cheapening the service by competition. Taken altogether they now own about half the total of 8,000,000 telephones. The spirit of competition between the Bell companies and the Independent companies is very keen. It has banded the Independents into a fairly coherent group, which strives with might and main, and with a vast amount of sound and fury, to get the better of its formidable rival. Many of the advertisements and counter-advertisements are distinctly amusing, and the battle is followed

with relish and appreciation by the general public. The Bell group has the advantage in organization, and in the possession of its fine system of intercommunicating long-distant lines; on the other hand the balance of local sentiment and local capital investment is generally with the Independent companies. There is, of course, no intercommunication between rival systems—the Jews have no dealings with the Samaritans—and the quasi-competition plus intercommunication which the British Post Office has for some years been carrying on with the National Telegraph Company is beyond their comprehension. Consequently many people have to rent telephones from both the companies in their district in order to keep in touch with their business associates, which is, of course, a very unsatisfactory state of matters. Generally speaking the tariffs of the independents are lower than those of the Bell companies in the same town. Where the opposite is the case the Independents claim that the rates of their opponents have come down as a result of competition, and in most cases I dare say they are right.

The number of free services given by many American companies is rather noticeable; by this I mean little incidental services for which no charge is made. For example, it is quite an ordinary thing for a person to give the telephone exchange notice that they desire to be awakened at a particular hour next morning, or even to make an arrangement for every morning. And the telephone company does it! At Chicago we were told that no fewer than 80,000 subscribers in a day call up to inquire the correct time—and they get it. Election results and the results of baseball matches and other sporting events are also circulated freely to all who want them. In these matters there is no scruple about unfair competition with the regular news agencies, such as disturbs the gentle hearts of English telephone authorities.

I am afraid I must admit that the telephone service is distinctly smarter in the large towns of America than it is with us. We have plant and equipment practically identical with that of New York or Chicago, yet the result in speed of service does not seem to be as good.

The long-distant service in America is often referred to as much more prompt than that given by the British Post Office, but the general statistics of the two services as a whole show that the average delay before a trunk connection can be obtained in

England is not very much greater than it is in America. The superiority of the American service is principally in communication between large centres, and in this respect it is indisputable. The explanation is simply that trunk lines between principal cities are provided in America on a much more lavish scale than has been done in this country. Consequently the American rates are high, as a matter of fact they are two or three times as high as the British Post Office charges for conversations covering the same mileage. This is a very important point which should not be lost sight of when comparing the two systems. The public pays with the usual American readiness, but nevertheless the statistics show that the trunk service is relatively much less used than it is in this country—another very important point in comparisons of public utility. The small man cannot afford the luxury of as much long-distant telephoning as he can here, and the richer users, who can afford it, get the benefit in promptitude of service. In this country, with its lower charges, the trunk lines carry far more traffic, and one has to wait longer for one's turn. It would be a hard matter to get the British public to stand the increase in the trunk charges necessary for the building of the great numbers of additional lines which would be required to bring the service up to the American standard. Each line must bring in an adequate revenue to pay for working and maintaining it if the service is to be conducted on a business footing, and the problem the Post Office has to face in the speeding up of the trunk service is not at all an easy one. I may say that not only do our trunk lines show a much smaller proportion of idle time than those in America, but the proportion of waste time, that is, time occupied in passing calls and arranging connections, is also much lower.

The less ample provision of lines in this country has forced the Post Office to study very keenly how to get the maximum amount of traffic over them in the busy hours of the day, and in this respect we have little to learn from America.

The development of the "farmers' lines" is a distinctively American product, and is largely due to the initiative of the people themselves, who had constructed a great many lines in far outlying country districts before the telephone companies had made the discovery that there was a big revenue to be derived from the cultivation of such rural services. Some very weird

productions were to be found among the lines built by the farmers in the earlier days. An extra long post in the snake fences here and there, with a bit of fencing wire strung along on broken bottle necks spiked to the top of them, to serve as insulators, was all that was wanted to put ten or a dozen farmers into useful communication with one another.

Of the many things we saw and admired in the telephone world of America, there is none that impressed me more than the quality of their organization, the statesmanlike ideas which underlie it, and the hearty way in which all appear to believe in it and to support it. This organization is typical to general American methods, and to it much of the national success is due. Its three fundamental ideas are reasonable specialization, devolution of responsibilities, and direct co-operation between officers whose work is associated.

The apparent harmony with which all classes work together in the American services is striking. Two or three times I commented on this, and the reply in each case was to the same effect—"Employ high-grade men and there will be no friction"—with which excellent sentiment I will wind up.

NEGATIVE DISCUSSION

American Telephone and Telegraph Co.

Governmental and Private Telegraph and Telephone Utilities:
an Analysis. [Abridged.]

[The numbering of the tables in this abridgment corresponds with those given in the abridgment of Mr. Lewis's speech in Congressional Record.]

[Referring to Lewis's Table 5.] That this comparison is unsound and does not substantiate Mr. Lewis' conclusions as to the efficiency of telegraph personnel will be apparent from the following:

i. The table is based on data which do not include all telegraph employees in foreign countries. Both in the United States and in other countries many postal, telegraph, and telephone employees are engaged in the work of more than one service, including, in many instances, railroad service. As stated above, no definite classification of employees in the postal services of foreign countries exists. Even in the official annual reports no attempt is made to allocate "joint" employees, i. e., such employees as are not engaged exclusively in telegraph duties.

For instance, the annual reports of the Telegraph Administration of Belgium do not distinguish between the number of telegraph employees and the number of telephone employees; their reports do show, however, that the number of employees in the Railroad, Postal, and Bridges and Highways Administrations, who have telegraph or telephone duties in addition to other duties, is greater than the total number of employees of the Telegraph (including Telephone) Administration. These employees have been ignored in Mr. Lewis' statistics. Telegraph messengers, of which there are about 3,600, a very large proportion of the total employees, also do not appear on the payroll of the Telegraph Administration.

In the case of Sweden, a letter from the Telegraph Administration, dated February 18, 1913, states that an accurate distinction between telegraph employees and telephone employees "does

not exist." The Administration states, however, that on December 31, 1911, there were at least 3,422 telegraph employees. This is 88 per cent more than the number of telegraph employees quoted for the same date in the source (*Journal Telegraphique*) from which Mr. Lewis derives his data.

In the case of The Netherlands, Mr. Lewis arbitrarily excludes 2,078 joint postal-telegraph employees in calculating the telegraph efficiency. If these joint employees had been included in the total of telegraph employees, the number of telegrams per annum per employee in The Netherlands would have been less by about 34 per cent than that shown by Mr. Lewis.

A study of Mr. Lewis' statistics as to telegrams per office shows that they are in error because, in the case of foreign countries, *all kinds of telegraph offices are included*, whereas, in the case of the United States, *all railroad and other offices not directly operated by the telegraph companies are excluded*. For example, in the case of Sweden, Mr. Lewis has used statistics of telegraph offices which include 1,729 railroad (1,246 private company) telegraph offices, or 60 per cent of the total. Similarly, for New Zealand, Mr. Lewis has used the figure for telegraph offices given in the *Journal Telegraphique* (1,963), but the Annual Report of the New Zealand Administration for the same year (1910) states: "Of these, 300 were telegraph offices and 1,663 were telephone offices." Probably this means that only 300 were Morse operated offices (the only kind used by Mr. Lewis for the United States).

It will be noted from these facts that if railroad and telephone operated offices in foreign countries are included as telegraph offices, similar offices must be included for the United States in any such comparison if it is to be either fair or accurate.

Not only is the operative efficiency of the American telegraph systems exceedingly high but this is true *even though the hours of telegraph office operation are much longer in the United States than in any other country*. This is evident from the following facts as to the length of hours of telegraph offices in the countries named by Mr. Lewis:

[See Table I, page 131.]

The term "Complete or Prolonged Day Service" is not defined in the *Journal Telegraphique*, from which the above statistics for foreign countries are derived; but, in general, "Complete

TABLE 1

	Per cent of total telegraph offices.			
	Open	Complete or perman- ently.	prolonged	Limited day service.
New Zealand (1910).....	0.0%	95%		5%
Norway (1912)	0.3	10		89.7
Belgium (1912)	1.0	26		73.0
Sweden (1912)	1.6	43		55.4
Netherlands (1912)	0.7	16.9		82.4
Switzerland (1912)	0.3	19.4		80.3
Western Union Telegraph Company:				
Open day and night.....				19.3%
Open until midnight or later.....				5.9%
Open from 10 p. m. to midnight.....				6.4%
Total open later than 10 p. m.....				31.6%

or Prolonged Day Service" does not extend beyond 10 o'clock p. m. Most of the Telegraph Administrations do not give, in their annual reports, statistics as to the hours of service of their telegraph offices. In the case of Switzerland, however, full information of this character is given, and will serve to indicate the significance of the comparison shown above.

TABLE 2
TELEGRAPH OFFICES—SWITZERLAND, 1912

Number of offices with continuous service.....	6
Number of offices open until 10 p. m.....	17
Number of offices open until 9 p. m.....	359
Number of offices open from 7 or 8 a. m. until 12 m., and from 1 p. m. to 8:30 p. m.....	84
Number of offices open from 7 or 8 a. m. until 12 m., and from 2 p. m. to 6 p. m., and from 8 p. m. to 8:30 p. m.....	1,908
Total	2,374

[Referring to Lewis's Table 2.]

The significance of the columns as to telegraph traffic development and mail development is incorrect, incomplete, and misleading, and the inferences drawn from it by Mr. Lewis are not justified for the following reasons:

1. The comparison does not take into account differences in methods of counting chargeable words.
2. The comparison does not include urgent rates for foreign countries.
3. The comparison covers foreign domestic rates only, whereas the international service is more nearly comparable to that given in the United States.

4. The comparison of average receipts per message is misleading, due to the duplications in counting international messages and the division of international telegraph receipts.

5. The comparison does not take into account the differences in the hauls of telegraph messages.

6. The comparison does not take into account the element of differences in costs.

7. The comparison covers only nominal prices and nominal receipts per message; whereas the actual prices and the actual receipts per message can be ascertained only by including revenue obtained by taxation to cover telegraph deficits.

8. Mail rates are not significant in comparisons of telegraph rates.

Differences in Methods of Counting Chargeable Words

It is obvious that no unqualified comparison of telegraph rates can be significant unless the rules as to chargeable words are identical. As the American rules are absolutely different from the foreign rules concerning words in addresses and signatures of telegrams, it is apparent that Mr. Lewis has not taken into account a factor of vital importance in comparing American with foreign telegraph rates.

The words of the address and signature are not charged for under American practice, with minor exceptions as to signatures, whereas a charge is made for such words under European practice. The number of such words per telegram that are free in the United States, but charged for in Europe, is about eleven by the American counting rules, and about ten by the European rules. Although it is true that the actual average number of words in the address and signature is much less in Europe than in the United States, it is noteworthy that the American method is distinctly a part of the telegraph service to patrons, and that the European method forces the use of code addresses.

The significance of the difference between the American and the European methods is indicated by the fees which the foreign public pays for the registration of addresses. For example:—

Country.	Annual charge for registering telegraph addresses.
Great Britain.....	£ 1-1 (\$5.10)
Germany.....	M. 30 (7.15)
France.....	Fr. 40 (7.70)
Austria.....	Kr. 40 (8.10)

It will be apparent from the above that in comparing American with foreign telegraph rates, some method of taking into account the differences in the treatment of words in addresses and signatures must be secured. Probably the most accurate method of doing this is to compare the American rates for ten words of text, the address and signature being free, with the foreign rates for twenty words, on the assumption that patrons in foreign countries will require, as in the United States, an average of at least ten words for the address and signature. Since, however, the foreign practice results in addresses of an average of five words, by the use of registered addresses, an additional comparison should be made between the American rates for telegrams of ten words of text and those for foreign telegrams of fifteen words, including address, signature and text.

The rates quoted by Mr. Lewis for foreign countries are for "ordinary," not "preferred," telegrams, whereas the rates quoted for the United States are for regular day messages—a prompt service equal to the foreign "urgent" or "preferred" service. It should be noted that, as to the United States, Mr. Lewis has made no reference to: (a) day letters (a non-urgent day telegram subject only to the priority of day messages); (b) the night message, which is a reduced rate for night service; and (c) the night letter, a deferred night message.

It is not intended to imply that the American deferred services are exactly comparable with the European deferred services, or that the preferred service in the United States and Europe are exactly comparable. Nevertheless, the mere existence of an urgent rate in Europe indicates that a high charge must be paid to secure the kind of service which the American systems are equipped to handle as a matter of course. Hence, it is true that Mr. Lewis should have compared the European "preferred" rates with the American day message rates, at least in addition to using the European ordinary rates.

The following table has been prepared to remedy some of the omissions of Mr. Lewis' Table [No. 2]. In preparing this table, the rates shown for foreign countries are for *ten words of text*, which are allowed under the American minimum rates, plus ten words of address and signature, the average used in the United States by European count, and charged for in Europe; and also for ten words of text plus five words of address and signature, the probable actual average in Europe:

TABLE 3

TABLE OF COMPARATIVE TELEGRAPH RATES FOR TELEGRAMS WITH
TEN WORDS OF TEXT. DOMESTIC RATES ONLY.

Country.	Ordinary rates for 10 words of text address and signature assumed to average:		Preferred rates for 10 words of text address and signature assumed to average:	
	10 words.	5 words.	10 words.	5 words.
Luxemburg.....	\$0.136	\$0.102	\$0.407	\$0.307
France.....	.193	.145	No urgent rate	
Norway.....	.268	.201	.804	.603
Belgium.....	.116	.096	.232	.193
Netherlands.....	.141	.121	.282	.242
Sweden.....	.268	.201	.804	.603
New Zealand.....	.20	.15	.40	.30
Great Britain.....	.20	.131	No urgent rate	
Switzerland.....	.154	.15	No urgent rate	
Germany.....	.238	.179	.714	.536
Italy.....	.212	.164	.637	.492
Denmark.....	.268	.201	.804	.603
Austria.....	.244	.183	.731	.549
United States.....	.25	.25	.25	.25
United States.....	.30	.30	.30	.30

Rates in the United States higher than 30 cents are not shown, as they apply to distances greater than ordinarily obtain under the foreign domestic rates.

It will be observed from this table that the foreign ordinary rates in many cases approximate the American rates; and that the foreign urgent rates are from two to three times the American rates in several instances, and are lower, even assuming an average of five words in address and signature, in only two cases.

Mr. Lewis' Table [No. 2] is misleading and incomplete, not only because of the omission of "urgent" rates in foreign countries, but also because he has included only the domestic (i. e., internal) rates for European countries. His failure to include international rates is a matter of great importance, because of the very small size of the European countries, as compared with the United States, and because of the short hauls which European domestic rates cover. For example, a telegram passing from France to Sweden (via Germany) is counted as a message in France, in Germany and in Sweden; and the total revenue therefrom (for transmission between the offices of receipt and destination) is divided between these countries in about the following proportions: France 36 per cent; Germany 28 per cent; and Sweden 36 per cent. The ordinary (i. e., non-urgent) rate from Paris to Stockholm for 15 words (including average of five for address and signature) is \$.724, for a distance of about 1,000

miles. The rate from New York to Chicago for 10 words of text (address and signature not charged for) is 50 cents for about the same distance. In Mr. Lewis' statistics, one message from Paris to Stockholm is counted as three, at an average of about 25 cents each; but the message from New York to Chicago will be included as one message, at 50 cents. Similarly, the rate for a message of 15 words (including five for address and signature) from Paris to Vienna, a distance of from 600 to 700 miles, is \$.579. In Mr. Lewis' table such a message would be treated as three messages (via Germany), at an average of \$.193 each.

European international rates are higher than the American rates for similar distances. As to domestic rates, however, the element of length of haul is a vital one, to which no attention is called by Mr. Lewis. The longer average hauls in the United States would naturally make rates and revenues per message higher than the respective domestic rates and domestic revenues per domestic message in Europe. This, combined with the facts that the traffic is naturally short haul in Europe, and that telegraph traffic is naturally long haul in the United States (due largely to higher telephone development), shows that the conditions are so essentially different, as to make the comparisons of American average revenues per message with European averages, without significance.

The importance of the factor of lengths of hauls is clearly indicated by the following:

(a) Comparative Areas and Distances in Foreign Countries
and in the United States.

[See Table 4, page 136.]

(b) Significant Comparisons.

The *average* length of haul for Western Union telegrams is about 570 miles and therefore *exceeds* the *maximum possible* (not the average) haul in Belgium, Denmark, Luxemburg, Netherlands and Switzerland, the domestic rates of which Mr. Lewis compares with those of the United States.

The *average length of haul* on Western Union night letters is 1,025 miles and exceeds the *maximum possible domestic haul* (i. e. air-line distance) in the principal countries the rates of which are used by Mr. Lewis; and the average haul on American night letters is *nearly twice* the average distance between the largest 47 cities in western Europe (600 miles).

The average haul on domestic commercial telegrams in Belgium is officially stated to be 42.5 miles. According to the *Journal Telegraphique*, domestic messages constitute about 66 per cent of the total originating commercial messages in Belgium. Less than 5 per cent of the Western Union traffic is for hauls of 40 miles or less.

TABLE 4

Country.	Approx. area in Sq. miles.	Per cent of U. S. area.	Approx. maximum air line dimension.	Per cent maximum air line dimension to U. S.
United States.....	3,026,789	100.0	3,000	100.0
New Zealand.....	104,751	3.5	800	29.4
Austria	115,800	3.8	800*	26.6*
Belgium	11,400	.4	170	5.7
Denmark	14,800	.5	250	8.3
France	207,000	6.8	700	23.3
German Empire.....	208,800	6.9	900	30.0
Great Britain.....	121,400	4.0	770	25.6
Hungary	125,600	4.1	800*	26.6*
Italy	110,700	3.7	730	24.3
Luxemburg	998	...	50	1.7
Netherlands	12,600	.4	210	7.0
Norway	124,100	4.1	1,000	33.3
Sweden	172,900	5.7	960	32.0
Switzerland	16,000	.5	200	6.7

* This is the maximum east and west distance of Austria and Hungary combined.

More than 90 per cent of the telegraph traffic originating in Great Britain is domestic. The mean distance between the largest cities in Great Britain is about 150 miles. More than 50 per cent of the business of the Western Union Company exceeds 200 miles.

TABLE 5

TELEGRAPH DEFICITS

Country.	Deficit	Per cent deficit to revenue
Austria.....	.....	..
Belgium.....	.....	..
Denmark.....	.....	..
France.....	\$1,880,000	23
Germany.....	3,500,000	45
Great Britain.....	4,653,771	30
Italy.....	.....	..
Hungary.....	.....	..
Netherlands.....	671,431	62*
Norway.....	.....	..
Sweden.....	.....	..
Switzerland.....	.....	22
Australia.....	799,206	20
New Zealand.....	313,212	23

* Netherlands makes a serious attempt to treat the accounts of the postal services on a commercial basis as a matter of permanent practice. In Australia, the figures were prepared by special investigation.

[From Appendix D.]

Austria

No information is available as to the financial results of either the telegraph or the telephone service, but the combined postal, telegraph, and telephone services produced (1912) a *deficit* of about \$500,000. As the postal service is generally conceded to be profitable in Europe, it is very probable that this deficit results from telegraph or telephone operation, or both, on which, therefore, the deficit is probably greater than \$500,000.

Denmark

From 1876-77 until 1902-03, the combined telegraph and telephone services showed annual deficits, but since that date the published receipts have exceeded the published expenses by about 15 per cent. In reply to an inquiry, however, the Administration explains that no charges for interest or depreciation are included in the published expenses, so that the published profit is fictitious. It is significant that the net result of the telegraph and telephone operations from 1876 to 1911, even without allowing for interest or depreciation, was a loss of about \$395,000.

Sweden

From Report of Walter F. Burgess to Chicago City Council, April, 1907:

The manner in which the figures of the (Telegraph and Telephone) Department are presented, and the padding of the "assets" is an excellent example of the way in which the figures of many of the continental Telephone and Telegraph Departments are presented and there can be no doubt that if the Telegraph and Telephone Department made proper allowance for depreciation upon its property and was obliged to create a sinking fund and pay interest for all moneys which it has obtained at different times, the alleged profit which it shows at the present time would be converted into a deficit.

Mr. Lewis makes much of the assumption that telegraph rates in the United States have not been reduced since 1888, as showing how absence of the "public service motive," even with competition, affects rates; but Mr. Lewis is seriously in error even as to the facts concerning his own country. The facts are as follows:

During the past 25 years rates in the western and southern parts of the United States (including eastern rates to the west and south) have been substantially reduced, and the tendency

for all rates has been downward,—without reference to the introduction of night letters (adopted March 1, 1910) and day letters (adopted March 1, 1911). In fact as recently as July 1, 1912, the Western Union Telegraph Company made substantial reductions in 5,000,000 to 6,000,000 rates.

Mr. Lewis insists that the mail, telegraph, and telephone services are more or less interdependent; and it has been indicated hereinbefore that the short haul telegraph service has been supplanted in the United States by telephone service. Mr. Lewis, moreover, admits that in Europe the telephone was taken over by the government largely to protect the telegraph revenues, which can only be understood as indicating that the original policy was to restrict the telephone so far as necessary to prevent loss in telegraph traffic. That this has been the case is shown rather clearly by the fact that in Luxemburg, which has a *maximum haul* of only 50 miles, about 20 per cent of the total originating commercial telegraph messages are domestic, and, therefore, of the character which in this country are ordinarily sent by telephone. Hence, no comparison of telegraph traffic development is, in itself, significant unless accompanied by telephone traffic development statistics; and, to be fully significant, mail development

TABLE 6
FIRST-CLASS MAIL, TELEGRAPH, AND TELEPHONE TRAFFIC PER INHABITANT, YEAR 1912

Country.	Population in thous-	Traffic per inhabitant.				Total.
		Mail.	Tele- grams.	Tele- phone.		
Austria.....	29,056	56.5	.50	12.55	69.55	
Belgium.....	7,570	50.8	.82	18.23	63.85	
Denmark.....	2,790	58.7	.62	81.24	140.56	
France (1911).....	39,601	43.5 (1912)	1.15	8.36	53.01	
Germany.....	66,640	81.8	.75	34.89	117.44	
Great Britain.....	46,122	91.0	1.77	23.81	116.58	
Hungary.....	21,213	28.5	.48	9.59	38.57	
Italy.....	34,890	21.6	.63	9.93	32.16	
Luxemburg.....	265	82.6	.57	18.45	101.62	
Netherlands.....	6,078	49.3	.76	27.92	77.98	
Norway.....	2,422	39.6	1.23	70.00	110.83	
Sweden.....	5,604	35.6	.49	77.47	113.56	
Switzerland.....	3,841	98.1	.83	17.85	116.78	
United States.....	96,299	106.0	1.05*	161.99	269.04	

* Estimated for all telegraph companies in the United States, less 10 per cent to compensate for duplications and errors.

Telegraph messages do not include inward international messages; transit international messages; or service messages. Ten per cent deducted from American telegraph statistics to avoid duplications.

(first-class) should also be included. For these reasons, mail and telephone traffic development statistics are shown, together with the telegraph traffic statistics, in Table 6, page 138.

[Table 7 gives the rank of each country as to mail, telegraph, and telephone traffic development relatively.]

[Referring to Lewis' Table 6.]

1. Mr. Lewis has included all classes of telegraph offices for foreign countries, but has excluded railroad and telephone telegraph offices for the United States. The percentage of railroad telegraph offices to total telegraph offices in some countries is greater than in the United States, as shown by the following table:—

TABLE 8

Country.	Per cent of railway telegraph offices (for commercial business) to total telegraph offices 1912.
Germany.....	13
Austria.....	33
Belgium.....	2
Denmark.....	68
Hungary.....	48
Italy.....	24
Norway.....	26
Great Britain.....	60
Netherlands.....	3
Sweden.....	17
Switzerland.....	21
Russia.....	49
France.....	16
Western Union, about.....	53 (Nov. 30, 1913)

It appears from the above that the European governments use railway offices very largely for telegraph purposes, although the density of population in most cases is much greater than in this country; and that in Denmark, Sweden, Russia and Hungary, the percentage of railway offices exceeds or approaches the Western Union percentage.

2. Mr. Lewis has excluded the various telephone offices used for telegraph purposes for the United States, but has included such offices for foreign countries.

3. In eliminating all offices except directly operated Morse offices for the United States, Mr. Lewis infers that the service from the offices excluded is inferior. The facts concerning delays in transmission in various types of foreign telegraph offices are not available; but so far as the adequacy of facilities to the pub-

lic is concerned, the length of hours of telegraph offices is a very significant factor which Mr. Lewis has overlooked.

Mr. Lewis, however, believes that the assumed inadequacy of telegraph facilities in the United States is attributable to the lack of the "public service motive." In this connection it is pertinent to note that in Great Britain, at least, many Post Office telegraph offices are maintained by local community or personal *guarantees*, "under which the guarantors agree for a term of seven years to pay one-third of any sum whereby the telegraph receipts may fall short of the annual cost of maintenance." The latest statistics indicate that there were 900 such offices in Great Britain in 1913, and that 65 per cent of the telegraph offices added during the year were opened on this basis. A similar practice is in effect in Switzerland.

Mr. Lewis should have included all telegraph offices in the United States, regardless of the method of operation or the financial basis on which they are conducted. Mr. Lewis states the number of post offices and branches as 64,022, and, although this includes post offices in Alaska, Hawaii, etc., where the American land line companies do not operate, this figure may be used. The number of Western Union Offices on October 31, 1913, was 36,491. Estimating the number of telegraph offices of other telegraph companies at 5,000, there are, say, 42,000 telegraph offices in the United States; or 1 telegraph office to 1.52 post offices, against 1 telegraph office to 7.7 post offices, according to Mr. Lewis. The fact is that, in relation to post offices, there are more telegraph offices in the United States than in Great Britain, Japan, Switzerland, Russia, Norway, Austria, Denmark, or Australia (the latter is 1 to 1.8; not shown by Mr. Lewis).

From the above it is clear that, in spite of the area covered and the high development of telephone facilities in the United States, its telegraph facilities are not restricted; and are, in fact, better than in many of the most important countries referred to by Mr. Lewis.

Summary as to Telegraphs

Mr. Lewis' propositions concerning telegraphs were: that the institutional efficiency of private telegraph systems was relatively low; that their rates were relatively high; and that the development of their service was relatively low. These propositions he attempted to prove by various assumptions which were erroneous.

In rebutting his assumptions and conclusions, it has been shown:

1. That high efficiency in the United States Post Office has not been demonstrated.
2. That the efficiency of the private telegraph organizations is not relatively low, but relatively high.
3. That the theoretical savings in routine operations under postalization could be secured only by curtailment of service.
4. That the theoretical savings in administration of telegraphs under postalization could not be effected, and are not effected when governments operate the telegraph.
5. That the theoretical savings in rent under postalization are small and doubtful of actual accomplishment in practice.
6. That rates of private companies are not high as compared with domestic foreign rates as a whole for similar service.
7. That rates of private companies are lower than those of governments for similar service on international lines.
8. That private companies have reduced their rates considerably during recent years, a fact which escaped Mr. Lewis' observation.
9. That government rates, though not lower than private rates, result in heavy deficits.
10. That the telegraph traffic development in the United States is high, and, in view of the great telephone development in the United States, is exceedingly high.

As to the Inefficiency of Private Telephone Systems

[Referring to Lewis's Table 18.]

1. Mr. Lewis apparently derived his statistics of telephone efficiency from the *Journal Telegraphique*. A study of the data which he used shows that he neglected the fact that the figures on the "total number of employees" given in that source are generally qualified in explanatory notes, and that those qualifications render the figures absolutely unsuitable for Mr. Lewis' purpose; for to show "telephone operative efficiency," the whole number of telephone employees must be considered, as Mr. Lewis admits by his assertion that "all kinds of employees of the telephone and post are included in the statement."

The following are the facts concerning Mr. Lewis' errors in this respect.

Norway—State System. The long distance staff is largely

joint telephone-telegraph. Statistics used by Mr. Lewis include only *exclusively telephone* employees; and hence also do not include executive officers and staffs.

Belgium. Joint telephone-telegraph employees are not included in the statistics used by Mr. Lewis.

Sweden. The statistics used by Mr. Lewis exclude all telephone plant employees, accounting employees and all employees of the executive department.

Switzerland. The statistics used by Mr. Lewis exclude 24 apprentice operators, 647 operators who have other work in addition to telephone duties, and 222 auxiliary operators.

France. Mr. Lewis' statistics include only such employees as devote their entire time to telephone work.

Italy. The actual computation for Italy, from statistics in the *Journal Telegraphique*, gives an efficiency of 38,490 calls per employee (1910) as against 67,727 per employee quoted by Mr. Lewis.

Netherlands. The statistics used by Mr. Lewis include operators only.

Bell Companies. The efficiency of the Bell organization, including *all* employees, and equated by Mr. Lewis' method, was 72,000 calls per employee in 1912, as against 58,134 quoted by Mr. Lewis.

It will be apparent from the above, even assuming that Mr. Lewis' method and his data as to traffic are correct, that the "telephone operative efficiency" of the foreign countries named above is far below that shown in Table No. 18.

2. Mr. Lewis' statistics of conversations are widely in error, due to his assumption that one toll or long distance conversation is equal to four local conversations. No broad equation of toll traffic in this manner is possible. For example: The amount of operating work involved in a long haul toll conversation is ordinarily much greater than for a short haul toll message. Again, the amount of labor involved depends upon whether there is a direct circuit between the terminating points, or whether it is necessary to engage the time of several operators in "building up" the circuit desired. Moreover, there is a very great difference in the kinds of toll calls. In the case of one class of toll calls, the operators have to secure the particular person desired before the conversation can begin. In a second

class of toll calls, the subscriber must himself secure the person after the connection is established, or, if the person is not there, must give his instructions to whoever answers at that telephone.

The figure for interurban conversations given in the *Journal Telegraphique* for Belgium is 1,816,793 (1910). This agrees with the statistics given in the Annual Report of the Belgian Telegraph Administration, where it is shown, however, that this total includes 464,044 international messages *including both incoming and outgoing messages*.

It will be apparent that the amount of this duplication in most European countries is considerable, as in the case of telegraph messages; and that it results in a very serious inflation of the "units" per employee in Mr. Lewis' "efficiency" statistics, where a single toll conversation is counted as four "units."

(b) In most countries the unit period of toll conversation is, as Mr. Lewis shows, three minutes. In most European countries, however, each three minutes or fraction thereof of an actual conversation is counted, for statistical purposes, as a separate conversation. This is not the American practice, so that Mr. Lewis' statistics for foreign countries are again inflated. This statement needs no further substantiation than a quotation from the instructions of the International Telegraph Bureau, accompanying the form on which the statistical returns are made by the various governments for publication in the *Journal Telegraphique*. The instruction is as follows:—

(Translation) Each interurban conversation is counted as a unit, independently of the number of central offices through which it passes, if it is completed within the unit period of time authorized under the rate system used. If it (the conversation) extends beyond this period, it is counted as many times as there are rate periods.

In the United States from 25 per cent to more than 50 per cent of the toll conversations extend beyond three minutes, and from 3 per cent to 10 per cent extend beyond six minutes, varying with the length of haul; but each message, regardless of duration, is counted as one message. This indicates how serious the duplication in the European method of counting is, in comparison with toll traffic in the United States. In Sweden the number of rate units used is 31 per cent higher than the number of actual conversations.

4. The term "phone call," used by Mr. Lewis, is not defined. The statistics for the Bell System cover completed conversations or messages only; but it is possible that those for foreign countries include attempted calls, since the record of completed conversations is obtained only by deducting from this total of calls, completed and attempted, the percentage, determined by careful observations, of calls not completed because: (a) the called subscriber does not answer; (b) the called subscriber's line is busy; etc. Hence, the statistics for the Bell System are compiled under the most restrictive definition—in fact, a much broader definition is used for routine administrative purposes in determining the efficiency of operation. The significance of this statement is indicated by the fact that the Census Bureau in quoting statistics of telephone conversations in the United States for 1912 (in published advance sheets) states in a note that those for the Bell Companies include only completed conversations whereas those for other companies probably include uncompleted conversations in addition. In view of these facts, and in the absence of specific information to the contrary, it is pertinent to question whether or not the foreign statistics are comparable with those used for the Bell System.

Under government systems, there is not given the broad, full service which would secure the highest utilization of the system on which Mr. Lewis lays so much stress, although, possibly, their practice of limiting hours of service very largely to the daylight period may assure full loads for operators while on duty. Even under these conditions, the evidence makes it clear that the number of calls per employee in the Bell System is much greater than in any other country.

However, there are other facts available which are more indicative of the institutional efficiency of the private systems. Of these, perhaps the most significant are those relating to the cost of plant under government ownership; for if it costs a government more per unit to build plants, in spite of the differences in price levels, it is obvious not only that the constructive efficiency of the governments is inferior, but that inevitably this inefficiency must result in unnecessary burdens on the public, either through rates or through taxation. The following statistics show the average investment per station of the various systems. These statistics are *all official*, though not all published:

TABLE 10
AVERAGE INVESTMENT PER TELEPHONE
JANUARY 1, 1913

Country	Average investment per telephone.
Austria.....	\$211
Belgium.....	276
France.....	257
German Empire.....	178
Hungary.....	192
Luxemburg.....	176
Switzerland.....	190
Australia.....	163
United States (Bell) *.....	153

* January 1, 1914.

In Norway, Sweden, Denmark, Italy and The Netherlands telephones are operated under both private and public management; but, inasmuch as the governments own the toll lines but do not own all the telephone stations using such lines, and as the companies own large numbers of stations but few toll lines, the investment statistics for these countries would of course not be significant.

[Referring to Lewis's Table 13.]

This comparison is misleading and incorrect, because:

1. It is a comparison of rates in exchanges having exclusively unlimited service with those having chiefly, or exclusively, message service. Mr. Lewis admits that such a comparison does not warrant definite conclusions, and for this reason gives a second table in which rates in what purport to be exclusively message service exchanges are compared. However, it may be well to note, in connection with Table [No. 13] that flat rates are quoted exclusively only in The Hague, Tokio, Auckland, Amsterdam, Rotterdam, Budapest, and Paris; and that in none of the cities named are the Bell Company rates exclusively flat rates.

2. The rates compared are maximum rates, whereas in most flat rate cities not more than 10 per cent of the subscribers pay maximum rates, and in message rate exchanges less than 1 per cent pay the maximum quoted charge, excluding Private Branch Exchange subscribers.

3. A comparison of minimum rates would be more significant because, in many cases, the minimum rate is used by the plurality of subscribers, and because it indicates the availability of the service. Whereas the mean maximum American rate is \$133.02

and the mean maximum rate in the foreign cities is \$43.46 (as shown by Mr. Lewis), the mean minimum rate in the American cities is \$23.17 as against the mean foreign minimum rate of \$28.80. The minimum rate of the American cities includes at least 365 messages per annum, whereas in two of the European cities [Stockholm and Copenhagen], the minimum rate includes no outward service.

4. The statement that the Chicago rate has recently been increased to \$125, "competition presumably removed," is incorrect. The rate of \$84 is a flat rate of the independent company still operating; and the \$125 rate of the Chicago Telephone Company has been in effect for many years, and was authorized by the Chicago City Council after complete public investigation in 1907. Under the Chicago telephone rate ordinance of 1913, this flat rate of \$125 was abolished as to all new subscribers, and in its stead a rate of approximately \$125 for not more than 6,000 messages was established. It should be noted that no change in rates in Chicago has ever been made as a result of competition. It is also important to note that the rate of \$84 is the only rate quoted by the independent company for business service, and that *more than 60% of the Chicago Bell business subscribers [not including private exchange subscribers] pay less than the independent company's minimum business rate.*

5. Mr. Lewis' Table [No. 13] consists of a list of cities not selected with regard to size, population, or the number of telephones. It is a matter of general knowledge that rates in large exchanges must be higher than in small exchanges. For example, the rates of the Post Office in London are higher than in the provinces; the rates in Berlin are higher than in other German exchanges; the rates in Paris are higher than in other cities in France.

6. A comparison of the rates in the foreign exchanges, named by Mr. Lewis, having unlimited service exclusively, with those in the United States of similar size having unlimited service exclusively, shows that the foreign rates are higher.

[Table 11 gives comparison of rates in exclusively flat rate exchange.]

[Referring to Table 14]:

When both flat rates and message rates are quoted, Mr.

Lewis uses whichever is the cheaper in computing his statistics for foreign cities (for example, in Berlin); but in preparing his statistics for some American cities (Boston, Cincinnati, and New Orleans) he has not done this.

The exchanges compared vary so widely as to the number of telephones, as shown by the following table, that in most cases no comparison of rates could be significant.

[Table 12 compares number of telephones in cities of similar size, United States and other countries.]

The rates in Berlin do not include night service, for which a special charge of about 5 cents per night message is made both to message rate and flat rate subscribers, in *addition* to any charges which would apply on day messages. A very large amount of traffic is handled during night hours in large American cities, so that obviously no comparison could be made between the Berlin rates and those of any American city.

The comparison relates only to rates for individual line business service. On what basis it is assumed that a comparison of rates for this class of service only is supposed to be significant, is not clear. As a matter of fact the rate for this service is not only the highest, but is also, from the standpoint of the public, among the least important. Not only do the very great majority of the subscribers in Bell exchanges receive service at lower rates, but the great majority are residence subscribers who receive service at very much lower rates.

It will be seen from the above that Mr. Lewis' table is not significant in any way. As a matter of fact, a comparison of this general type that covered even the chief factors of importance in the respective rate schedules would be so intricate as not to permit any general conclusions therefrom.

Of these facts the most significant in relation to rates are those concerning the hours of service. It has already been shown that the hours of telephone operation in the great majority of the exchanges of New Zealand, Switzerland, Sweden, and Belgium are so short as to impose serious limitations on the emergency value of telephone service in all except ordinary business hours, and, except in a few exchanges, to limit the use of the telephone during evening and night hours and on Sundays and holidays. Although the information concerning this factor in rates and service, in New Zealand, Swit-

zerland, Sweden, and Belgium, will serve to indicate the general conditions of foreign service, it is important to note, for completeness, that similar conditions are found in Austria, Germany, France, Great Britain, and Australia. This statement is based on the following general information:

Austria: "As a rule, the hours of offices (telephone exchanges) conform to those of the telegraph offices. Centrals with more than 100 main stations (i. e., subscribers) have at least full day service (in summer from 7 a. m., in winter from 8 a. m., to 9 p. m.)" This statement is significant in view of the facts that only 1.2 per cent of the government telegraph offices are open all day and all night, and that only 8.4 per cent of such offices have complete or prolonged day service.

Germany: As mentioned above, a charge is made in all German exchanges for night telephone calls. Since not all exchanges are open at night, rates are also quoted for connecting two subscribers' lines continuously during the hours when the central offices are not operated; or for giving a continuous connection during the hours when the subscriber's central office is not operated, with some distant central office that will be open during such hours.

In this connection, it should be noted that even in places of 30,000 inhabitants, service is not given after 9 p. m., and, although the people complain of this, the Government does not act. Herr Wendel, in the Reichstag on February 21, 1913, described the condition in the following words (translation):

I cannot forego to speak here about the wish expressed by one of our Electoral Districts. I refer here to Freiburg. There the entire telephone service is interrupted at 9 o'clock p. m. Five minutes after 9 o'clock it is impossible to obtain a telephone connection. Now the Town Council of Freiburg has addressed the Postal Administration and asked for the introduction of night telephone service. The Postal Administration has refused the request. It is true that Freiburg is a very pretty, idyllic and quiet town, and I am glad of it; moreover, the night is not man's friend. I admit this; but it must also be remembered that not all citizens of Freiburg go to roost with the chickens, and a sudden sickness, accident, fire—any kind of trouble—may require a quick telephone call for a physician, or for a fire brigade, just as much after 9 o'clock p. m. as prior to that time. It seems to me indefensible that a city of some 30,000 inhabitants should be deprived of telephone service at 9 p. m., and it is the duty of the Postal Administration to get quickly in touch with the Postal Direction of Freiburg or the Upper Postal Direction of Dresden in order that this justifiable request of the inhabitants may be granted.

Even in the day time, in many instances, the German telephone service is discontinued. Kraetke, Secretary of State for the Imperial German Post Office, with reference to this inadequacy of the German service, spoke as follows in the Reichstag on February 21, 1913 (translation) :

I have listened to the wish that our telephone exchanges should also be kept open during the noon hours. I wish to state that the various authorities have been instructed to exert themselves along this line. In accordance with the reports which are before me, I can state that 70 per cent of all our telephone exchanges give service between 12 m. and 1 p. m. In this connection it has also been stated that it is a mistake that neighboring exchanges stop service at various noon hours. I have also asked the various Telephone Directions to consider this request, as otherwise our telephone exchanges are not as valuable to the people as they might be.

Great Britain: There are many exchanges in small places which do not have continuous day and night service, the break of service being from 10 p. m. to 4 a. m. or 5 a. m.

France: Small exchanges are closed two hours at noon, after seven o'clock at night, and after ten o'clock in the morning on Sunday. In some of the larger places like Limoges (population 92,000) all-night telephone service is given, but only because the Chamber of Commerce pays for the expense, which it meets through subscriptions from the municipality, from newspapers, and from the general public. Nimes (population 80,000) has no telephone service after midnight.

Australia: "Hours of Attendance. When the revenue from subscribers' lines and services connected to any exchange is less than the rate of £150 per annum, attendance at that exchange shall be given only during the hours for which the office in question is *usually open for the transaction of public business*.

[Referring to Lewis's Table 15.]

1. The table is directly mendacious in that the columns showing Bell rates "before competition" and Bell rates "after competition wiped out, or Bell found it impossible to kill competition," are for the highest grade of business service; whereas the rates shown in the column "Bell rate during competition" are in no case, except for Kenosha, Wisconsin, rates for the highest grade of business service, but are in most cases for a lower grade of residence service; and in some cases, like York, Savannah, and Norfolk, the rate stated has not been quoted for any kind of service. The rates given as in effect

before and after competition are in several instances incorrect. In the column "before competition" the rates shown for Norfolk and Savannah were not quoted for any class of service, and the rate shown for Winona was quoted for a party line service. In the column "after competition wiped out, etc.," the rate shown for Norfolk was for individual line flat rate business service, while individual line message rate business service was available at \$24.00 less per annum; the rate shown for Savannah was a residence rate; and the rate shown for Winona was not quoted for any class of service.

2. The rates of the following exchanges named have been decreased, instead of increased, after competition has ceased:

Richmond, York (still competitive), San Jose, Dubuque, Savannah, Mobile (still competitive), Lynchburg, Oswego, and Iowa City. Rates have been increased by the Bell Company in no case, with the possible exception of Winona.

3. Such reductions as have been made in rates after the introduction of competition have, in most cases, been similar to those made at about the same period in non-competitive exchanges.

4. The statistics given by Mr. Lewis are not only incorrect as quoted in these instances, but the inferences which he draws or wishes drawn are not justified in general. A study of the rate history in exchanges where former competition has ceased, in places of more than 10,000 population, shows the following:

TABLE 13
BELL RATES AFTER CESSATION OF COMPETITION

	No. of Exchanges.	Per cent. of Exchanges.
No change in rates.....	47	51
No increase in rates in three years.....	3	3
Rates decreased.....	30	32
Rates increased within three years.....	13	14
Total.....	93	100

The above statistics cover exchanges where competition ceased prior to 1913. The total number of such exchanges in place of more than 10,000 population is about 140, and those eliminated in compiling the above table were not used because of no record, incomplete record, Bell exchange sold, or facts of doubtful interpretation.

With reference to Mr. Lewis' Table [No. 16] it should be noted:

That the rates quoted purport to be the Bell rates for individual line business service; but the rates quoted are not Bell rates for such service in the following instances: Chicago, Philadelphia, Cleveland, Minneapolis, New Orleans, Denver, Memphis, Dayton, Spokane, Trenton, Wilmington, Springfield, O., San Diego, Jackson, Decatur, and Burlington.

The rates compared are those for flat rate, mixed flat and message rate, and exclusively message rate exchanges. Mr. Lewis admits that a comparison of flat rate and message rate schedules is incorrect and misleading.

The exchanges are apparently compared on the basis of population, not on the basis of the number of telephones served.

[Table 14 gives comparative size of exchanges in various American cities.]

In comparing rates in message rate cities, the maximum quoted message charge is used. This is grossly misleading, since less than 1 per cent of the subscribers pay the maximum quoted message charge, or more, in any exchange. It would be more significant to quote the minimum message charge, since from 30 per cent to 50 per cent of the development in a given class of service is secured at the minimum rate. In this connection the following comparison is significant:

[Table 15 gives competitive and non-competitive rates for individual line business service, in specified cities.]

Rate schedules can be considered only as a whole, and specific rates cannot be compared for general purposes. The comparison quoted by Mr. Lewis contemplates the highest grade of service only, whereas the minimum rate for business, and particularly the minimum rate for residence service, are more important. The error of Mr. Lewis' comparison in this respect is shown by the following:

[Table 16 gives minimum rates in specified cities where maximum rates were shown in Lewis's table.]

It has not been possible to cover all the details of Mr. Lewis' tables [Nos. 15 and 16]. To do this would require a long and technical discussion, not warranted in this paper because Mr. Lewis apparently does not attach much importance to the tables, so far as government ownership is concerned.

[Referring to Lewis's Table 11.]

This table is incorrect and misleading for the following reasons:

1. In several instances there are important errors of fact.
2. The table does not take into account the shorter distances which are the more important.
3. The comparison does not take into account important differences in the methods of applying the unit charges.
4. The service given in the foreign countries is "two-number" service, whereas the service given in the United States is "particular person" service, the rates for which should not be, and are not, the same in any country where both types of service are given.
5. The comparison covers "ordinary" service only, whereas the Bell rates cover "urgent" or express service. This Mr. Lewis admits.
6. The comparison covers domestic service only, whereas a fair comparison should include international service.
7. The comparison does not take into account differences in the cost of construction and in operating wages.
8. The comparison does not take into account differences in costs due to differences in the character of service.
9. The comparison does not take into account the fact that toll service in foreign countries does not pay for its cost.

These more important considerations, in a comparison of foreign and American toll rates, are discussed in detail below:

Errors of Fact

In the cases of Norway and France, Mr. Lewis has confused kilometers with miles, the rates in both cases applying to 100 kilometers, or 62.1 miles, and not to 100 miles.

As to Austria, Mr. Lewis has shown a rate of 38 cents for all distances, whereas the rates are: 100 miles, \$.38; 300 miles, \$.61; 500 miles, \$.81.

In Sweden the rate for 500 miles is \$.27, not \$.20.

In Denmark the correct rate for 300 miles is \$.54, not \$.40.

In Japan the correct rates for distances of 500 and 700 miles are \$.87 and \$1.12, respectively, and not \$.82 and \$1.25.

In New Zealand the rate quoted by Mr. Lewis for 500 miles

must be incorrect, since it is lower than that which he quotes for 300 miles.

Denmark. The charge for "particular person" service is 6.7 cents. The initial rates vary from 6.7 cents to 53.6 cents. The "particular person" rate is, therefore, from 100 per cent to 12.5 per cent higher than the two-number rate.

Germany. The charge for "particular person" service is 5.95 cents in addition to the regular rates. As the rates vary from 4.76 cents to 47.6 cents, the "particular person" rate is from 125 per cent to 12.5 per cent higher than the "two-number" rate.

Austria. The charge for "particular person" service is 6.1 cents in addition to regular rates. As the rates vary from 6.1 cents to 81.2 cents, the "particular person" rate is from 100 per cent to 7.5 per cent higher than the "two-number" rate.

In the United States the "particular person" rates are ordinarily 5 cents higher than the "two-number" rates at short distances (from 5 to 20 miles), and are from 30 per cent to 20 per cent higher than the "two-number" rate for longer distances in the few cases where "two-number" service (optional) is given.

It will be seen from the above that for distances up to 30 miles the "particular person" rate in Europe is about 100 per cent higher than the "two-number" rate; and that for greater distances the "particular person" rate is not less than about 12 per cent higher than the "two-number" rate. It is a fact that in comparing American toll rates with foreign rates, when no specific "particular person" charge is stated, an amount equal to 100 per cent of the ordinary rate for the three minutes may be added with propriety for distances from 25 miles to 50 miles, and an amount equal to 25 per cent should be added for greater distances.

Mr. Lewis' comparison is, therefore, misleading in that the rates compared are not for the same kind of service. In this connection it should be noted that for the longer distances in the United States, when both "particular person" and "two-number" service are given (for example, New York-Philadelphia), the very great majority of messages pass at the "particular person" rate, although it is 25 per cent higher than the "two-number" rate. This will indicate roughly to what extent subscribers in France and Great Britain, for example, may be burdened with charges for unavailing calls under the "two-

number" system (i. e., in cases when the particular person desired is not obtained after the connection is established).

[Referring to Lewis' table 17.]

It is in error for the following reasons:

1. The statistics of toll conversations are erroneous, because in Germany local trunked calls are included as "toll" and the Administration cannot give the statistics of toll messages; because in most foreign countries messages are counted by *rate periods* and not by actual conversations; and because international messages are counted twice.

2. Statistics of toll or interurban conversations cannot be significant as to the development of toll service when related to the number of telephones. It is obvious that the greater the development of local telephone service, the greater the proportion of subscribers of restricted means, and of subscribers whose social or business circles are naturally limited to relatively small spheres. When telephone service is largely confined, as it is in the government systems, to the merchants and larger houses and to the more prosperous residents, the number of toll conversations per telephone would be likely to be high as against that in a system where the telephone was used by small business houses and in residences of all classes. As will be shown below, the development in telephones is so much greater in the United States than in foreign countries that it might be expected, although this is not the fact, that the number of toll conversations per telephone in the United States would be lower than in those countries.

For these reasons it is more significant to state the number of toll messages per capita, and this method is analogous to Mr. Lewis' method of measuring telegraph traffic development and mail development.

With moderate allowance for duplication in counting messages in foreign countries, the interurban and long distance toll traffic in the several countries is as follows:

[See Table 17, page 155.]

[Table 18 gives total telephones in service and number of telephones per 100 population in various countries, January 1, 1913.]

[Table 19 gives comparative telephone development in principal cities of the United States and in other countries.]

TABLE I7

Country.	Popula- tion in thous- ands.	Interurban toll con- versations per capita.
Austria.....	29,056	.17
Belgium.....	7,570	.26
Denmark*.....	.....	..
France (1911).....	39,601	.71
German Empire†.....	.....	..
Great Britain.....	46,122	.78
Hungary (1911).....	21,050	.09
Italy (1910).....	34,452	.10
Netherlands.....	6,078	.82
Norway.....	2,422	3.74
Sweden.....	5,604	3.25
Switzerland.....	3,841	2.58
New Zealand.....	1,071	.61
Australia.....	4,669	.70
United States.....	96,299	3.36

{ Maximum possible.
Obtained by divid-
ing toll revenue by
the minimum rate.

* Denmark not included, as it is believed that, in addition to the ordinary European "padding" by using rate periods and counting inward and transit international messages, there is the same type of duplication in counting messages between the private companies, and between the private systems and the government system, and between two companies over the government system. There is no doubt, however, that, due to the development by private companies, the traffic is higher than elsewhere in Europe.

† The administration states that no figure can be given and that those quoted in the *Journal Telegraphique* include free inter-office trunk calls in suburban traffic—in addition to duplications in counting.

Summary as to Telephones

Mr. Lewis' propositions concerning telephones were: that the institutional efficiency of private telephone systems was relatively low; that their rates were relatively high; and that the development of their service was relatively low. These propositions he attempted to prove by various assumptions which were erroneous. In rebutting his assumptions and conclusions it has been shown that:

1. The institutional efficiency of the American telephone service is not exceedingly low but exceedingly high.
2. The rates for American exchange service are clearly lower than those of any government system.
3. The rates for telephone service are lower in large American cities than in many large foreign cities operated by government administrations.
4. The rates in the smaller American exchanges are strikingly lower than in the smaller exchanges of the government systems. This is indicated most clearly, for general purposes,

by the disparity between the "rural" development in the foreign countries and the development in the foreign cities, resulting from the disproportionately high rates in rural communities of foreign countries.

5. The history of rates in American cities which were formerly competitive does not warrant the statement that, following the withdrawal of competition, Bell rates have been increased. As a matter of fact, it is clearly the case that, in general, the reverse has been true.

6. The American toll rates are clearly lower than those of the government systems for all distances within which the great volume of interurban toll traffic passes; and are, in fact, so much lower, that the American toll rates as a whole are distinctly far below the foreign toll rates.

7. The development of toll traffic in the United States is not relatively low, but relatively high, and is, in fact, approached only in those countries where private operation of telephone systems has materially fostered the development of the utility.

8. The development of local service, as indicated by local traffic per capita, is at least double that in any foreign country, although it is noteworthy that, in those countries which rank nearest to the United States in the development of traffic, private operation is a factor of very great importance.

9. The development of telephones per one hundred population in the United States is more than double that in any foreign country.

10. The development of American telephone service, as indicated by the development in the largest cities, is greater, on the whole, than in foreign countries. It is, however, equalled in those large foreign cities where private companies operate, either exclusively, or in competition with the government.

11. The development of telephone service, as indicated by the number of telephones per one hundred population in the smaller exchanges and rural communities, is very much greater in the United States, not only absolutely, but relatively to the development in the large cities in the respective countries.

TABLE 20

RELATIVE VALUE OF MONEY IN FOREIGN COUNTRIES AND IN THE
UNITED STATES, AS REFLECTED IN THE WAGES OF TELEPHONE
OPERATORS

Comparison of the wages of ordinary day switchboard operators:

Country	Largest exchange.	Actual.	Minimum weekly wage.	Weekly wage at end of three years.	
			Expressed in per cent, United States figure being	Expressed in per cent, United States figure being	
Austria.....	Vienna	\$3.00	50%	\$3.30	33%
Belgium.....	Brussels	2.60	43%	3.35	34%
Denmark.....	Copenhagen	2.50	42%	3.40	34%
France.....	Paris	4.10	68%	4.45	45%
German Empire.	Berlin	3.95	66%	4.60	46%
Great Britain...	London	2.65	44%	5.50*	55%
Netherlands....	Amsterdam	3.20	53%	7.20	72%
Norway.....	Christiania	3.70	62%	4.00	40%
Sweden:					
State.....	Stockholm	3.10	52%	4.00	40%
Company.....	Stockholm	3.10	52%	4.00	40%
Switzerland....	Zurich	5.20	87%	6.70	67%
United States...	New York	6.00	100%	10.00	100%

* Only if the operator is 22 years of age or over; if operator is less than 22 years of age, her wage is less than this figure.

These wages are here represented by the minimum wage (on beginning full active service) and the wage at the end of three years of service in the largest exchange in each country.

[In the complete paper every statement is supported by citation to authority. These have been necessarily omitted.]

Current Opinion. 56: 56. January, 1914.

Will Uncle Sam Grab the Telephone Wires.

The government ownership of all means of interstate communication, including the telegraph and the telephone, is being urged with increasing frequency. During the Taft administration government control, tho not government ownership, was advocated by Mr. Wickersham. The attitude of the Wilson administration is not entirely clear, but there have been sufficient rumors to warrant the question asked by Frederick Boyd Stevenson: "Is Uncle Sam trying to gather all the wires of the telephone and the telegraph companies into his hands and act the composite part of capitalist, promoter, business manager,

key-pounder, messenger boy, and hello-girl?" If he is, Mr. Stevenson goes on to say, in the *Brooklyn Eagle*, there's a nut for the economic enigma solvers to crack—and it's a hard one. Representative David John Lewis of Maryland has presented to the President the data gathered by him on the subject of the development of wire communication in this country. From any point of view, Mr. Stevenson writes, the magnitude of the proposition of government ownership of telephones and telegraphs must appear startling.

"There are two big corporations that control the great majority of the telephone and telegraph lines in the United States. These are the Postal-Cable Telegraph Company and the American Telephone and Telegraph Company. With the latter are affiliated the Bell Telephone Company, the Western Union Telegraph Company and the Western Electric Company. In addition there are something like 20,000 local or independent telephone companies of more or less importance. All together the telephone companies operate more than 8,500,000 telephones, which are two-thirds of the telephones operated in the world. To maintain this wonderful system more than 18,179,000 miles of wires are employed.

"The Western Union Telegraph Company operates for telegraph purposes in this country 235,800 miles of wire and the Postal Telegraph-Cable Company 350,125 miles of land wire. Many of the wires of the Western Union Company are utilized for telephone purposes as well as telegraph. Then there are the railroad telephone wires in the United States which consist of 120,000 miles. It is impossible with the data now obtainable to present any satisfactory figures regarding the wire mileage of the 20,000 local and independent telephone companies, but together they operate more than 4,000,000 telephones. In round numbers the combined telephone and telegraph land mileage of the United States is more than 18,000,000 miles, while the total telephone and telegraph mileage of the world is 34,566,000 miles."

The investment of the two chief telegraph companies in cable lines is not included in Mr. Stevenson's calculation. He also omits the investment in 20,000 independent telephone lines and the investment in railroad wires. Twenty-two billion telephone conversations take place in the world in a year. Of these no less than 14,500,000,000 fall to the share of the United States.

In proportion to the population the United States has 90 telephones to each thousand inhabitants, while there are only six European countries which have more than 10 telephones to every one thousand inhabitants.

Some Comment on Government Ownership of Telephone Properties.

F. H. Bethell.

In an effort to show that our Post Office is the most efficient in the world and our telephone system less efficient than some of the government owned systems in Europe, Mr. Lewis resorts to the most amazing use of statistics.

The total number of pieces of mail is divided by the total number of government employees in the various countries. He utterly ignores the fact that a large part of the work of handling the mail in this country is done by employees of contractors, while abroad it is handled by the post office employees directly. Naturally, it is not surprising that the number of pieces of mail handled per government employee is greater here than abroad.

The method of using the telephone statistics is equally astonishing, even assuming that the statistics themselves are correct. The total number of messages, say in Norway and this country, is divided by the total number of employees, not only operators, but men engaged in building pole lines, conduits and other construction work, agents engaged in soliciting new business, and a large maintenance force looking to the upkeep of the property—something sadly neglected in government owned systems.

Mr. Lewis in his speech presented many statistical tables, statistics that must be presumed to be correct in that they were presented by a responsible law maker in an effort he is making to secure legislation that will, if carried to its logical conclusion, bring about absolute paternalism in this great government of ours. And yet his statistics are so inaccurate, so biased, so unfair, as to amount to an outrageous imposition upon Congress and upon the country.

We find him quoting \$228.00 per annum as the rate charged for business individual line service in New York City, leaving it to appear that that is the only rate charged. The fact is more

than 50 per cent of the subscribers pay \$48.00 or less per annum, while less than one-half of one per cent pay as much as \$228.00 for that class of service.

Here is another example of the "statistics" quoted by Mr. Lewis. He has spoken so frequently and so warmly of the efficiency and the low rates of the telegraph service in New Zealand—twelve words for twelve cents—that I was interested and desiring to know the actual conditions, inquired by cable of a reliable source. Here is the cable I received in reply:

New Zealand Government tariffs for telegrams within New Zealand are—(A) for urgent messages, one shilling [that is 25 cents] for twelve words or less, additional words one penny [that is 2 cents]; (B) for ordinary messages, sixpence [12 cents] for twelve words or less, additional words one-half penny. *Address and signature counted and charged for.*

In this country there is no charge for address or signature. Hastily drawn conclusions, you see, may be very misleading. New Zealand evidently is Utopian only when viewed from a long distance. I remember several years ago the Chief of the Department of Posts and Telegraphs at Wellington spent some time with us in New York City, studying our methods. He spoke most admiringly of our telephone system; referred to it as the best service in the world, and regretted that because of government handicaps, he was unable to put into practice some of our methods. Particularly was he interested in the manner in which we were extending the service by means of our selling organization, combining an aggressive canvassing and advertising policy. It would be beneath the dignity of the government he said, to solicit business from the public.

Mr. Burleson and Mr. Lewis both urge that government ownership would extend the telephone to every man's home. Yet both propose that those small companies, many of them guided and assisted by the big commercial companies which have extended and are extending their services through the sparsely settled sections, should be left alone. In other words, while they say there ought to be a telephone in every man's home, they are willing to leave it to private enterprise to place the telephone there. Has the Government really extended its postal facilities to every man's home? How many of you touring through the country have not seen at a fork from the main road a cluster of post boxes. The country folk, living for many miles

down that side road, are compelled to maintain a box on the rural delivery route because there is no such route by their doors. The Bell system today reaches more than 5,000 places where the Government does not even have a post office. The rural telephone development in this country is something quite unknown in European countries. Some years ago, there was an International balloon race from St. Louis eastward, and the British competitors came down in a farmer's yard in Ohio, miles from a railroad station. One of the aeronauts expressed his surprise that there in an ordinary farmhouse, he should find a telephone ready to transmit a message to the next neighbor, a telegram to New York, or a cable to his family in England. This universality of the telephone is so much a matter of course with us that we do not realize the effort that has brought it about.

The report submitted to Congress by Mr. Burleson contains many evidences of lack of knowledge. You will remember it was stated in that report that the telephone buildings need not be purchased because the telephone plant could be easily moved into the Post Offices and one building accommodate both services. You all know something about the accommodations in your Post Office here in Albany. I should like to have you view our buildings, go through our various Central offices, look over our apparatus, and then decide for yourself the reasonableness of Mr. Burleson's statement.

In Albany we are now occupying eight buildings, containing thirty-eight thousand square feet of floor space, and, as you know, have planned, and are now building a magnificent ten-story building to take care of what we consider will be Albany's need for telephone service in the future. The *Newburgh Journal*, commenting on Mr. Burleson's plan, says:—

Here in Newburgh, the present post office building is inadequate for the postal department as it has of these great public utilities, it is no telephone building, a structure larger than the post office, could be housed in the cramped quarters of the post office certainly has elements of humor. If the committee which favors the absorption by the Government of the telephone and telegraph lines has as much real practical knowledge of the postal department as it has of these great public utilities, it is no wonder the postal department pays no dividends.

Quarterly Journal of Economics. 28:581-6. May, 1914.

Public Ownership of Telegraphs and Telephones.

A. N. Holcombe.

The objection to the statistical evidence presented in the Post Office departmental reports is not the difficulty of drawing from it some valid and trustworthy conclusions,—tho that difficulty is real enough. The serious objection lies in the fact that such statistical comparisons are likely to prove altogether too much. A comparison, for example, of telephone development in Iowa with that in Mississippi will furnish the same evidence of disparity with respect to efficiency as is afforded by the Postmaster General's comparisons in the case of the United States as a whole and Europe. In the cotton belt however, private enterprise has enjoyed the same freedom as in the corn belt. If the development of the service in the former has lagged behind that in the latter, the explanation must be sought in circumstances wholly unrelated to the question of government versus private ownership. In fact, the physical, economic, and social conditions are very different in Iowa from what they are in Mississippi, and differences in the development of the means of communication inevitably ensue. This is true, not only of the telegraph and telephone, but of all the means of communication, and, indeed, of labor-saving devices generally. One would expect to find in Iowa, not only more telephones than in Mississippi, but also more automobiles, type-writers, cash-registers, steam shovels, and fountain pens. The same holds of a comparison between the United States as a whole and Europe. The question of government versus private ownership certainly has little relation to these differences.

The Postmaster General, in his attempt to prove the desirability of the "postalization" of the telegraphs and telephones, has barked up the wrong tree. The American public will never be convinced of the superiority of government ownership by statistical comparisons. Whether or not government ownership will "pay" in this country, depends partly upon the price which must be given in order to acquire the existing telegraph and telephone properties, but in the long run mainly upon the character of the organization which will be provided under govern-

ment ownership for the conduct of the business. The Postmaster General who would win the confidence of the public for a proposal to "postalize" the telegraph and telephone, must produce, not statistics but a *plan* for the conduct of the business, which will hold out the promise of more economical and more efficient operation than is now the case. The Post Office departmental report contains no intimation of the present existence of such a plan.

Electrical World. 51:609-10. March 21, 1908.

Congress and Wireless Telegraphy. Walter W. Massie.

The public has probably little idea of the serious menace to the future of wireless telegraphy which is offered by the Hale bill to regulate wireless telegraphy, now before Congress.

It would be interesting to know whether the various Government officials are acting blindly or are knowingly attempting to force legislation that will have the immediate effect of arresting the development of a valuable art and deprive the public of a service that would in time give them trans-oceanic telegraphy at one-tenth the rates now paid for cable service.

The bill, which would give the Government full control of the wireless field, deals with existing conditions without considering the fact that wireless is still in its infancy and is making enormous strides each year. Where would our telegraph service be today had the Government taken control of it in the forties and said there could be only one wire between two places? It is true that there is a great deal of interference between wireless stations today, but is it to the best interests of all to have the Government take control and say there shall be only one station in a given locality for the reason that another nearby station would cause interference? It would be far better to let the situation stand as it is and give inventors an opportunity to overcome the present difficulties; and from my practical work in this field, I know that it will not be many months before this is accomplished.

Under the proposed act we would be compelled to go to the Government for a license whenever we wished to build a station, in which case a permit would be granted if the station is to be in a locality distant from other stations. For instance, assume that we desire to establish an independent trans-Atlantic wireless

service, and we apply to the Government for a permit, the locality being, say, somewhere on the New England coast. There are already numerous stations the entire length of the coast, and if we were fortunate enough to obtain a permit at all it would be with restrictions to hours during which none of the other stations cares to operate. Moreover, is it to be supposed that the telegraph and cable companies will, if the Hale bill is enacted, remain passive and allow us to establish trans-Atlantic service when a protest and a little influence used in Washington will prevent it?

The telegraph and cable companies have been very persistent in publicly ignoring wireless telegraphy as a competitor.

The telegraph companies are realizing their danger from competition; and with the Government innocently (?) acting in their interest, the public would be deprived of all the benefits of legitimate competition.

As for the development of wireless telegraphy, we have only to compare the present conditions in Great Britain and this country. When the Marconi Company was first formed it obtained a 10-year license or contract from the English Government; as a result it is the only company today in England, and the English battle-ships have only such apparatus as the Marconi Company can give them. On the other hand, in the United States there are now seven or eight companies in vigorous competition, which has resulted in improvement of apparatus and increase of efficiency to such an extent that our navy today stands first in wireless and holds the record for long-distance marine communication. Our merchant marine is also getting the advantage of competition and receiving wireless service at reasonable rates, while the English merchant marine is compelled to use the Marconi system or none, and at whatever price demanded.

As to the grievance of the Government with respect to interference, I may cite a case that happened on the Sound last fall. A government message was being sent from Washington to Newport via Fire Island (all land stations); complaint was made because Sound boats interfered with the transmission and it was asked that boat work should cease when government plants were sending. In time of peace, and when both the Western Union and Postal Telegraph Companies are rendering efficient service between Washington and Newport, is it just to make such a demand and use wireless to the detriment of the service of boats which are dependent wholly upon the wireless?

It is lack of capital that is holding back the development of wireless telegraphy, which lack is largely due to the uncertain status of the industry owing to threatened interference by the Government; but, even with dearth of capital, I firmly believe that within five years, barring government interference, we will see it successfully competing with cables and trunk lines, and that trans-oceanic rates will be cut down to a fraction of what they are today. From my experience and observation, I am thoroughly convinced that within 10 years the laying of trans-oceanic cables will entirely cease, and while the use of the present cables will undoubtedly be continued, the wireless system will be installed and maintained at a cost less than what would be the interest on the cost of a new cable.

The art of wireless telegraphy is still young. Scarcely a decade has passed since its practical value was first demonstrated. Important improvements are constantly being made, and with increasing knowledge of etheric radiation inventors will still further perfect the art unless all incentive to do so is removed by governmental action such as the Hale bill authorizes.

Railroad Transportation. p. 257.

Arthur T. Hadley.

Government ownership of the telegraph prevailed in continental Europe, because each country was more or less of a bureaucracy; that is, the civil service governed the country, and was so well organized that it extended itself as a matter of course. In America the civil service is not so well organized, does not govern the country, and is not allowed to extend itself as a matter of course. Political reasons decided the question in favor of a government telegraph in Europe. Political reasons form the main ground against a government telegraph in the United States.

Baltimore (Md.) American. April 10, 1908.

Reprint of Statement Made in 1808 by Thomas Jefferson.

Having always observed that public works are much less advantageously managed than the same are by private hands, I have thought it better for the public to go to market for whatever it wants which is to be found there.

**United States. President Taft's special message to Congress,
February 22, 1912, relating to Postmaster General
Hitchcock's proposal for a postal telegraph.**

This presents the question of a government ownership of public utilities, which are now being conducted by private enterprise under franchises from the Government. I believe that the true principle is that private enterprises should be permitted to carry on such public utilities under due regulation as to rates by proper authority, rather than that the Government should itself conduct them. This principle, I favor, because I do not think it in accordance with the best public policy thus greatly to increase the body of public servants.

Of course, if it could be shown that telegraph service could be furnished to the public at a less price than it is now furnished by telegraph companies, and with equal efficiency, the argument might be a strong one in favor of the adoption of the proposition. But I am not satisfied from any evidence that if these properties were taken over by the Government they could be managed any more economically or any more efficiently, or that this would enable the Government to furnish service at any smaller rate than the public is now required to pay by private companies.

Wilson, Woodrow. Speech before Federation of Democratic Clubs in Pennsylvania, Harrisburg, June 15, 1911.

[Reprinted in Congressional Record, August 14, 1912, p. 11824.]

The regulation of corporations is hardly less significant and central. We have made many experiments in this difficult matter, and some of them have been crude, and hurtful, but our thought is slowly clearing. We are beginning to see, for one thing, how public-service corporations, at any rate, can be governed with great advantage to the public and without serious detriment to themselves, as undertakings of private capital. Experience is removing both prejudice and fear in this field, and it is likely that within the very near future we shall have settled down to some common, rational, and effective policy. The regulation of corporations of other sorts lies intimately connected with the general question which ramifies in a thousand directions, but the intricate threads of which we are slowly beginning to perceive constitute a decipherable pattern. Measures will here also frame themselves soberly enough as we think our way forward.

The State.

Woodrow Wilson.

Society can by no means afford to allow the use for private gain and without regulation of undertakings necessary to its own healthful and efficient operation and yet of a sort to exclude equality in competition. Experience has proved that the self-interest of those who have controlled such undertakings for private gain is not coincident with the public interest: even enlightened self-interest may often discover means of illicit pecuniary advantage in unjust discriminations between individuals in the use of such instrumentalities. But the proposition that the Government should control such dominating organizations of capital may by no means be wrested to mean by any necessary implication that the Government should itself administer those instrumentalities of economic action, which cannot be used except as monopolies. In such cases, as Sir T. H. Farrar says, "there are two great alternatives, (1) ownership and management by private enterprise and capital under regulation by the State, (2) ownership and management by Government, central or local." Government regulation may in most cases suffice. Indeed, such are the difficulties in the way of establishing and maintaining careful business management on the part of the Government that control ought to be preferred to direct administration in as many cases as possible,—in every case in which control without administration can be made effectual.

American Telephone and Telegraph Company.

Statistics Showing the Extent to which Employees under Civil Service Might Be Increased by Public Ownership of the Telephones, Telegraphs and Railways in the United States.

The number of employees in telegraph, telephone, railroad and post office work is as follows:—

Utility	No. of Employees
Commercial Telephone (Census Report 1907)	142,436*
Commercial Telegraph (Census Report 1907)	28,034
Railways (Interstate Commerce Commission Report 1909)	1,502,823**
Postal Service (Postmaster General's Report 1909)	325,000
	<hr/>
	1,998,293

*Including 75,653 female operators.

**Including 39,115 dispatchers and telephone operators.

The following is the number of votes cast in presidential elections:

Year	Total Vote	Votes for Winning Candidate	Plurality of Winning Candidate
1876	8,412,723	4,033,950	250,935
1880	9,209,406	4,449,053	7,018
1884	10,044,985	4,911,017	62,683
1888	11,380,860	5,440,216	98,017
1892	12,059,348	5,556,918	380,810
1896	13,923,102	7,104,779	601,854
1900	13,959,653	7,207,923	849,790
1904	13,510,648	7,623,486	2,545,575
1908	14,888,442	7,678,908	1,269,804

Some Facts about the Parcels Post.

James A. Stewart.

The following remarks are not intended as a reflection upon the parcel post as an institution, nor upon the plan as originally devised, but rather to show the results of trying to conduct a commercial business upon a rational basis through a centralized government bureau, and to indicate what is likely to happen should it devolve upon this same department to deal with the vastly more complicated local and toll telephone rates.

Statements quoted below from the *Congressional Record* were made largely by western Senators, who approved of the establishment of the parcel post. In fact, the distinguished Senator from Kansas, Mr. Joseph Bristow, was Chairman of the Sub-Committee on Post Offices and Roads, which drafted the original law.

Mr. Bristow is peculiarly well qualified to discuss the subject as he was Fourth Assistant Postmaster General under Presidents McKinley and Roosevelt.

Radical Changes made in Rates without Proper Investigation

In 1912, after a very complete study, Congress passed a Parcel Post Law fixing the maximum weight at eleven pounds and providing rates classified by eight zones, the radius of the minimum zone being fifty miles. In order to determine the revenue derived, special stamps were provided for this class of service. Without waiting for the report of the Commission appointed by Congress to study the effect of these rates and

classifications upon the revenue, the Post Office Department raised the maximum weight to twenty pounds and then to fifty pounds, enlarged the minimum zone from 50 to 150 miles, made certain reductions in the rates and abolished the distinctive stamps. That these changes must have been made without a knowledge of the probable effect upon the revenues produced by the original law is indicated from the following remarks of Senators, as reported in the *Congressional Record*, for February, 1914.

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SENATOR POINDEXTER (Wash.). I want to say in answer to the Senator from Kansas that I have here a very elaborate table of figures from the Post Office Department giving the cost and the receipts of the parcel post.

SENATOR BRISTOW (Kansas). I desire to state to the Senator from Washington that the estimates are mere guesses. Whenever the use of the distinctive stamp was abolished all opportunity of ascertaining the revenue from the parcel post was destroyed. To determine it is utterly impossible. You may inquire of postmasters anywhere throughout the country and they will tell you that these estimates are mere guesses and nothing else.

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SENATOR LODGE (Mass.). Mr. President, will the Senator allow me to ask him a question there?

SENATOR BRISTOW (Kans.). Yes.

SENATOR LODGE. How does the Postmaster General ascertain the cost of transportation? I understand the separate stamp has been abolished, and the ordinary letter stamp may be used.

SENATOR BRISTOW. Yes.

SENATOR LODGE. How, without a separate stamp, can he reach accurately the cost of the parcel post?

SENATOR BRISTOW. He cannot. It is an estimate.

SENATOR LODGE. Then we have no means of knowing accurately what the parcel post costs?

SENATOR BRISTOW. No; there is not any way of telling.

SENATOR LODGE. And we cannot tell while we have no separate stamp?

SENATOR BRISTOW. No.

SENATOR LODGE. It is all jumping in the dark?

SENATOR BRISTOW. I think so.

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SENATOR BRISTOW. But what has happened? With but a few months' investigation, practically with little investigation, we have gone from step to step until now we are loading tons of iron ore and groceries into the mails and breaking down the rural contractors, who contracted to carry letters and papers and simply incidental small packages.

Rates Higher than Express Rates in Many Cases

In spite of the claims made for the success of the parcel post, the rates for the longer hauls and heavier packages are now greater than those of the express companies.

Cong. Record, Page 4221

SENATOR BRYAN (Fla.). The Senator also inquired as to the relative cost now, since the express rates have been reduced by order of the Interstate Commerce Commission. Stating it generally, subject, perhaps, to a few minor exceptions, under the rates established by the Interstate Commerce Commission for the express companies and under the rates which the Postmaster General has established, the postal rates are less than the express rates up to 4 pounds; they are about the same for 5 and 6 pounds, and then the parcel-post rates are greater than the express rates.

A few of the comparative rates are given below:

Parcel-post rate between New York and Pittsburg, Pa., 20-lb. package	\$.83
Express rate between New York and Pittsburg, Pa., 20-lb. package .....	.46
Parcel-post rate between New York and Muskegon, Mich., 20-lb. package	1.22
Express rate between New York and Muskegon, Mich., 20-lb. package .....	.65
Parcel-post rate between New York and Des Moines, Ia., 20-lb. package	1.61
Express rate between New York and Des Moines, Ia., 20-lb. package .....	.82

The parcel post rates here quoted are for packages uninsured, whereas the express rates are for packages insured up to \$50. The rate for insuring the same packages sent by parcel post to the value of \$50 would be 10c. in addition to the rates quoted above for a 20-lb. package.

It must also be borne in mind that the Government does not, through the parcel post, furnish a service equivalent to that of the express companies. The parcel post omits the following essentials of a complete service:

1. It does not collect parcels;
2. It does not give receipts;
3. It does not provide indemnity for loss, except upon extra payment and only to the amount of \$50;
4. It does not provide any indemnity for damage;
5. It does not provide controlling records, by reason of which omission the volume of loss is increased;

6. It does not provide special means of security for valuable parcels;
7. It does not provide adequate protection against damage, but, on the contrary, promotes damage and loss by opening in transit;
8. It does not provide for the transportation of a wide range of special commodities.

The Post Office Embarks in the Freight Business Without any Preparation

When the original limit of eleven pounds was fixed, it was thought that packages of this weight could be carried with the ordinary mail and in the regular mail cars, and that the rural carriers would not be overloaded in delivering such packages. When, however, the weight was raised to fifty pounds, the Government practically went into the business of transporting freight. Shippers began sending iron ore, bricks and other heavy freight by mail.

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SENATOR LODGE. If the Government is going to enter into the business of carrying freight, it should carry it at freight rates and not at mail rates.

SENATOR BRISTOW. That is exactly the point.

SENATOR LODGE. They ought to do it as freight business is done; they ought to carry it at freight rates and as heavy freight, and not with the delivery and at the rate which the mail service costs. It seems to me that we are now going along on the apparent idea that this is a profitable system. Just as long as you are robbing the star routes and robbing the railroads and robbing the rural carriers you can say that it is profitable, but it will not last; it will end the moment the Government is brought face to face with the actual cost it will have to pay to carry the freight.

SENATOR BRISTOW. The Senator from Massachusetts is absolutely right. We have undertaken to adapt the freight business to a postal system. As long as you can confine the parcel-post to small packages it is all right. Under the zone system which we developed, if the Postmaster General had let it alone, we would have gone along nicely, and then if we had concluded that it was desirable to increase the weight of the package so as to make it freight business we would *first have organized* a system for carriers of freight different from that for carriers of mail. That is the fundamental difficulty which is confronting the Congress now.

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SENATOR BRISTOW (Kan.). Now I come to another interesting statement (Quoting from a letter from a star route contractor in Idaho):

"Allow me to call your attention to the contractors on the routes

between Boise and Idaho City, and Mountain Home and Rocky Bar. When the contractor of the Boise-Idaho City took the contract his bid was for \$7.68 per trip; parcel post so increased the mail and diminished the express that he was forced to give up his contract, and his bondsmen, who are now operating the line, are doing so at the cost of \$46 per day. The same facts are true in the case of the Mountain Home contractor."

SENATOR BRISTOW. Another interesting statement which I want to call to the attention of the Senator is this:

"After throwing up his hands in despair and calling for aid, when three carloads of ore, in 50-pound packages, shipped by parcel post, were handed him to deliver recently—"

Now, think of that. I should like to call the attention of the Senate to this proposition.

SENATOR GALLINGER (New Hampshire). Three carloads?

SENATOR BRISTOW. Three carloads of ore—"the contractor who handles the mail between Stites and Elk City, Idaho, is expected to succumb when he begins to receive from Spokane a 50,000 parcel post shipment of groceries over the same route."

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SENATOR CLARK (Wyoming). When the Postmaster General assures us that there is at the present time a great surplus, and more revenue coming in to the mail service or the Post Office Department by reason of the parcel post, he fails to take into account the mail carriers and the mail contractors that he is forcing into bankruptcy because they are carrying all this increased mail at no increased cost to the Government; and when he comes to let his new contracts he will either have to throw up these mail routes or else he will have to let them at such figures as will permit the carrying of freight.

The apparent revenue vanishes into thin air when those things are considered. We are compelling these contractors to carry this mail for nothing, and taking the revenue and calling it a net profit on the service. Mr. President, it would be the worst thing that could happen to this country if any scheme should be evolved that would break down the star-route service in the country remote from railroads.

Furthermore, the rural carriers are also affected, but they have been to some extent compensated by increased pay. The reflection of all these increases is yet to be shown in the expenses and many of the rural carriers are still dissatisfied. There is also the possibility that instead of the rural carriers being able to carry the parcel-post packages with other mail, that a separate rural delivery for parcels post will be necessary.

Saturday Evening Post. pp. 77-9. April 18, 1914.

The Lame Duck.

Take the Post Office situation, because there are more postmasterships than other offices. Postmaster General Burle-

son, working at the highest possible speed, appointed sixteen thousand postmasters during the first year of the Wilson administration. He replaced sixteen thousand Republican postmasters with sixteen thousand Democratic postmasters—an average of more than fifty a day for the three hundred working days of the year. That, of course, didn't make much of a dent in the total number of postmasters in this country, which is in the neighborhood of eighty or ninety thousand; but it shows that the Postmaster General is at least making an earnest effort to put Democrats where Republicans have flourished for sixteen years, subject to such limitations as are prescribed.

The Postmaster General is blameless. His appointments are made according to his best lights. He is an able and conscientious man, and he has a place of enormous difficulty. The Senators and Representatives are not to blame. They do the best they can for the party, for the local communities affected, and with an eye to the most advantageous political effect. The President is not to blame. He depends, as he must, on the recommendations of those beneath him, who are familiar with all the circumstances.

It is the system that is to blame—the system of parcelling out offices as reward for voting this way or that; the system that places the administration of the business affairs of this Government in the hands of the party for the instant in power and, disregarding the plain business sense of the situation, makes a political reward of an administration place instead of making that place a business responsibility.

Of course all this is as old as the hills. It has been going on since we began as a nation, and in all probability it will go on until the end. I cite it merely to show that, so far as demanding spoils for victory is concerned, we haven't advanced an inch beyond the days of the early seventies, notwithstanding all our efforts at civil-service reform—not advanced an inch, I mean, so far as the impulse is predicated.

Under pressure of public opinion the civil service has been expanded and it retains many persons in office; but in their hearts the members of the dominant party always loathe the civil service, and there never has been a minute in the past 30 years when civil-service law would not have been repealed if the men with the repealing power had dared.

Saturday Evening Post. September 13, 1913.

A Question of Justice.

Federal salaries have not been systematically revised during all the years when cost of living has been steadily rising. One soulless corporation after another has adopted a pension scheme for its employees. The Government has none. From the insufficient data at hand it is calculated that something like ten thousand injuries to federal employees arise every year from industrial accidents; and in compensating the victims the Government lags much behind the standards that the people through legislative action have enforced upon private employers.

Only for employees in occupations that are deemed hazardous—the Panama Canal, navy yards and arsenals, for example—is any compensation provided. And an injured employee for whom no provision is made in the law, cannot—like the employee of a private concern—*sue for damages*.

Doctor Rubinow reports in the *Survey* seventeen fatalities and a hundred and twenty-four injuries in the rural mail delivery service, and eight fatalities and four hundred and forty injuries in city mail delivery—for none of which was a cent of compensation paid. Altogether he mentions sixteen hundred injuries, three hundred and ninety of them fatal, without compensation!

On a like record from the Steel Trust, the halls of Congress would ring with denunciation—which illustrates again that the Government, though very free with advice to others, will not conduct its own business decently.

New York Telephone Company.

Some Facts Regarding Government Ownership of Telephones.

Welfare of Employees.

The federal Government is far behind the privately owned telephone enterprises in caring for the welfare of its employees. It provides—

No old age pensions.

No sick benefits.

No death benefits or insurance.

What effect will government ownership of the telephone enterprise have upon the thousands now benefiting from these welfare provisions?

The Bell Telephone Company alone has been awarded four medals by international expositions, for providing healthful, pleasant working conditions for its employees and caring for their present and future welfare.

Recently the Postmaster of New York City, in replying to criticisms that women were not given employment, stated that the conditions, sanitary and otherwise, in the New York Post Office building, made it an unfit place for women to work in.

How long would a privately owned public utility be permitted to maintain such conditions?

The Bell Companies alone own and operate, in connection with its business, equipment to the value of \$765,000,000.

The Post Office Department does not own even the post office buildings it occupies; the mail cars belong to the railroads; the pneumatic tubes, in cities like New York, and even the mail wagons, are owned and operated by private companies.

The construction and operation of the vast and complex telephone system is an entirely different problem from collecting and delivering the mail.

If the city of New York were as inadequately supplied with public telephone stations as it is with mail boxes, and the Telephone Company did not provide additional facilities upon complaint of the public, the company would be properly *ordered* to do so by the Public Service Commission. But what redress has the public in the case of the Post Office? Complaints of lack of letter boxes have been frequent enough during the past years, but no result is apparent.

In the winter of 1913, a severe sleet storm swept over the lake region from Chicago to Buffalo, causing damage amounting to a half million dollars.

It was vitally necessary for the business interests of this section that services should be restored at the earliest possible moment.

Thousands of men and trainloads of material were at once rushed to the affected territory. The situation was quickly met and the services restored.

Wire using companies meet such crises every year. No red

tape has to be unwound. There is no wait until Congress passes an emergency appropriation.

If the Government takes over the telephone and telegraph systems, will Congress delegate authority to the Post Office Department to spend millions for emergency demands without the customary debate and delay in sending appropriations through the usual channels?

Wall Street Journal (New York). p. 1. June 15, 1914.

Editorial.

Latest figures show that Washington, D. C., has the highest per capita tax of any city in the United States, which is an unanswerable argument for letting Congress do everything.

Concerning Municipal Ownership. 6: 253-6. November, 1913.

Public Ownership Abroad. Sydney Brooks.

The Telephone and the State

"In the Bell System 7,500,000 telephones are connected and work together to take care of the telephone needs of the people of this country."

An Englishman can only gape in envy and amazement at such stupendous figures. They mean that there are more than twice as many telephones operating under a single system in the United States as there are under all systems and all companies in the whole of Europe. Telephone statistics are not easily obtainable, but I do not think I am far wrong in asserting that there are about 16,000,000 telephones in existence the world over and that of these North America (including Canada and the West Indies and Mexico) accounts for nearly 12,000,000; Europe for slightly over 3,000,000, and Asia, Africa, South America and Australasia, for about 500,000. Roughly speaking, over two-thirds of the world's equipment of telephones is to be found in the American Union.

Of the cities possessing 10,000 telephones and over, considerably more than half are situated in the United States. There are at least fifty American towns where there is a telephone to less than every ten of the inhabitants; in Europe there is only

one. London, with a population more than three times as great as Chicago, has fewer telephones; Paris is twice the size of Boston, but possesses little more than half as many telephones; Liverpool, three times as great as Los Angeles, has only a little over a third of its number of telephones; Glasgow, twice the size of Cincinnati, has seven thousand fewer telephones; Birmingham with a population of over half a million, has four thousand fewer telephones than Grand Rapids, with a population of some 140,000; Manchester has fewer telephones than Louisville, though it is over four times as big; Moscow has fewer than Seattle, though its population is five times greater; Vienna with four times the population of Detroit has twenty thousand fewer telephones; Hamburg has ten thousand fewer than Cleveland, a city half its size; Milan, with a population of well over half a million, has about a third as many telephones as Omaha, with a population of 160,000; Breslau is considerably over four times the size of Spokane and yet boasts five thousand fewer telephones; and Amsterdam with a population of nearly 600,000 has fewer than Des Moines with a population of 90,000.

In the whole of the United Kingdom there are only about as many telephones as in New York and Chicago; in all France there are fewer than in Chicago alone; in all Russia there are fewer than in Philadelphia; in Austria fewer than in Boston; in Italy fewer than in Los Angeles; in Spain fewer than in Toledo, Ohio; in Belgium fewer than in Kansas City; and in Hungary fewer than in Pittsburg. We may take the figures in yet another way. Roughly speaking there is one telephone for every nine Americans. If the same proportion obtained in Europe, Denmark would have three times as many telephones as she actually possesses; Sweden three and a half times; Norway four and a half times; Switzerland five times; Germany six and a half times; Great Britain seven and a half times; The Netherlands eleven times; Belgium nearly eighteen times as many; France nineteen times; Austria all but thirty times; Hungary thirty-seven times; Italy fifty-six times; Portugal and Spain about ninety times; Russia one hundred and five times, and Greece, Servia and Bulgaria from one hundred and seventy to two hundred and four times as many.

Now these are very remarkable figures. Their significance, perhaps, may best be judged when one remembers that at the

time the telephone was invented all the leading industrial nations were equally well placed for developing it and applying it to their own conditions. The United States had no natural advantages whatever; it had on the contrary the disadvantage of being a sparsely settled country, contending with enormous distances. Look at the map of the United States and of any European country and you would say, and rightly say, that it is the latter and not the former that lends itself most easily to being connected by telephone, the towns being nearer together, the urban population proportionately greater, and other means of communication being already well provided.

Then why is it that the United States has forged so conspicuously ahead? Is it that the Americans as a people are readier to adopt a new invention and quicker to perceive its possibilities? Partly that, no doubt. Was there any technical reason why the utilization and expansion of the telephone should have been on a far bigger scale in America than in Europe? I know of no such reason. Some, at any rate, of the improvements that have made the telephone a practical instrument and a profitable business, have been not of American, but of British invention; and I hardly think that any one would claim for American engineering that it is more skillful or progressive than the magnificent technique and inventive genius that have given France the lead both in motor-cars and in flying machines.

What, then, is the explanation? For the superiority of the American telephone system does not reside in numbers merely. If one could institute a comparison between the efficiency of the telephone services provided in Europe and in America, the disparity on the scientific and commercial sides, and particularly from the standpoint of the consumers' convenience, would be found to be even greater. Not only are there far fewer telephones in Europe than in the United States, but those that exist are, as a rule and as every traveler has learned by bitter experience, almost ludicrously inferior in quality.

There are great and famous towns in Europe at this moment where a plant and apparatus of the kind that went to the scrap-heap in America twenty years ago still obtain; where the obsolete magneto system, long ago abandoned in the United States for the central battery, is still adhered to; where the old flat-rate scheme of tariffs is still the rule; and where the single exchange

district, with relatively high rates for distant parts of the town, still holds the field; while throughout the length and breadth of England and the Continent there is hardly a single efficient long-distance service to be found.

What is the reason for this extraordinary contrast?

Concerning Municipal Ownership. 6:277-80. December, 1913.

Public Ownership Abroad. Sydney Brooks.

The Telephone and the State

The main reason for the almost inestimably higher standard reached by the United States in every department of the telephone industry is that in America it has been left free to expand in its own way and without official restrictions, while in Europe it has been in most countries a state monopoly. Both policies have their advantages, and both their disadvantages.

The American people, by permitting free competition in telephones, have suffered more than a little from the collision of rival companies and from the growth in some parts of the country of two or more systems, each supplying the same locality, but refusing to one another any cooperation of facilities. Furthermore, now that the laws of economic consolidation, greatly to the public advantage, have brushed aside most of the confusion of earlier days and have resulted in bringing the bulk of the telephone business of the country under a single, unified control, the government necessarily finds itself confronted with a huge corporation that practically monopolizes a great public utility.

In Europe, on the other hand, this situation and its difficulties have been largely avoided by making the telephone from the first a state monopoly; but they have been avoided at the cost of furnishing the public with a meagre, exasperating and totally inadequate and unprogressive service.

There cannot be much doubt as to which side the balance of advantage inclines. The more, indeed, one inquires into the history of telephone development in Europe, the more convinced does one become that, while a monopoly in private hands is often objectionable, it may be ten times more objectionable in the hands of the state, and that, while a country may incur some

political risks if a public utility is left under corporate control, it suffers far more if the same utility is furnished by the state in an inefficient and unenterprising form. What does it profit an Englishman like myself, grappling daily and even hourly with the embittering inadequacies of the London telephone system, to know that it is a government possession? A well-run, privately owned monopoly is of incomparably greater benefit to the people than the same monopoly badly run and owned and operated by the state. And, remember, it is always easier to bring a privately managed utility under the proper supervision of the government than it is to raise a state department to the ordinary corporation level of business ability.

In those countries of Europe where the telephone has not been made a government monopoly, the system of issuing limited licenses, terminable at the end of a fixed and usually too brief period and under indefinite conditions as to the repayment of capital, has had the effect of hindering the flow of private investment. Moreover, even in countries where the telephone has been taken over by the state, the governments have shrunk from putting the necessary money into the business. All the European States lose money on the workings of the telegraphs, and they have no desire to incur further deficits in connection with the telephones. But if the American companies had been afraid to pour out money without any immediate return, if they had neglected to adopt new improvements even at the cost of rebuilding their entire plant, if they had hesitated to accumulate an ample margin of spare facilities over and above the demands of the day, America would not at this moment enjoy the best telephone service in the world.

Low Rates Are Dear—at the Price of Efficiency

In almost every country where the telephone is a government monopoly, you will find that it has not been carried beyond the tentative and experimental phase that America left behind two decades ago. More rigid and with less initiative than private corporations, hampered by political considerations, unwilling to concentrate responsibility, less disciplined and less elastic in their organizations, the governments of Europe, with perhaps two exceptions, have made their administration of the telephone

a synonym for all that is wasteful and incompetent. They pride themselves on the comparative cheapness of their subscription rates and call rates. But a cheap service that is inefficient and backward is far worse, from the standpoint of the public welfare, than a dearer service that is prompt and can always be depended on. I would rather any day spend 10 cents (if that is the charge) in New York and be sure of getting the number I wanted, and of getting it at once, than waste 4 cents in London on a prolonged babble with a stupid operator, insufficient lines, and a conversation—if any conversation ensues—that is only audible when it is interrupted.

Private Enterprise Hampered by the Government

What is the history of the telephone in Great Britain? It is the history of an invention over which the Government from the start asserted a legal monopoly, but the practical development of which it leased to private corporations in return for a 10 per cent royalty on the gross receipts. The State never showed the slightest prevision of what the telephone was destined to become, or of how it ought to be popularized, or of the proper policy demanded in the public interests for its regulation. It began in the usual way by scoffing at the new invention, but even while it scoffed it sought to safeguard itself against the possibility that it might some day compete with the government's ownership of the telegraphs. It threw upon private initiative all the risks of the new enterprise, reserving to itself the right to expropriate the ultimate profits. It failed altogether to realize that competition in telephones, so far from being a protection, was really a betrayal of the public interests. Accordingly it scattered its licenses broadcast and encouraged the municipalities, always with disastrous results, to exploit the new utility for themselves. It hampered the private companies in every way with jealous shortsightedness, and finally it employed its irresistible statutory powers to buy them out on terms that were in the last degree ungenerous and oppressive. After impeding them at every turn and withholding from them essential privileges that were freely granted to the rival municipal enterprises, it then used their inefficiency and unprogressiveness as an argument for public ownership.

And this, more or less, has been the experience of the telephone industry in all the chief European countries. Can it be wondered at that there is no telephone system from London to Madrid or from Madrid to St. Petersburg that even begins to approach the excellence of the service that obtains all over the United States?

[Expanded more fully in North American Review. 195: 496-512. April, 1912.—Ed.]

New York Telephone Company.

Some Facts Regarding Government Ownership of Telephones. p. 56.

It is a significant fact that the most successful telephone system in Europe is operated by a private company in the capital of Denmark. Note the following comparison between it and the state owned companies in other European cities of the same size:

	Population	Telephones per 100 Population
Copenhagen, Denmark	608,000	8.4
Munich, Germany	606,000	5.5
Leipsic, Germany	617,000	4.6
Dresden, Germany	558,000	4.3
Marseilles, France	565,000	1.4
Lyons, France	547,000	1.3
Antwerp, Belgium	487,000	1.6
Naples, Italy	723,000	.5
Budapest, Hungary	880,000	2.8

What the English People Think of Their National Telephone.

Based Upon Special Correspondence and Selected Letters Addressed to and Published by the *Times* (London) During the Month of December, 1913.

Results of Efficient Service

There is no doubt that the superiority of the American system has been attained in a great measure by administrative ability in its organizers and the wide field of opportunity, with few serious obstacles of competition, in which they have worked. Their outlook has been steadily national, not parochial. They have realized that defective telephonic communication is, in every sense, bad business, and that the factors constituting good service, in the order of their importance, are (1) speed and accuracy in securing

connections; (2) volume and clearness of sound transmitted; and (3) cost. They have realized that the money value of the time and temper wasted by the public over a bad service is a far more serious consideration than any reasonable charges imposed for a good one, and they have therefore proceeded on the principle that speed and reliability are more important than cheapness. Furthermore, Mr. Vail's civic ideals have been applied, with loyalty and enthusiasm, throughout. *Esprit de corps*, and a spirit of emulation between exchanges, are encouraged to the utmost. One of the best features of the telephone business as organized in America is the public appreciation of the staff's keenness, its "team work," and pride in efficiency.

Under such conditions the public service retains its human interest—no small factor in smooth working—and the "telephone habit" becomes easily explicable. In January, 1911, the number of telephones in New York was equal to the combined totals of London, Paris, and Berlin.

Failure of Government Control

In Great Britain the history of telephone legislation has persistently reflected the vacillations of immature opinion, and the varying attitude of permanent officials, of the Post Office, and the Treasury. Further causes of disorganization lie in the relaxation of discipline and *esprit de corps* consequent upon the transfer of the telephone company's personnel to the Post Office; in the jealousies and friction between old employees and new, all tending to impair smooth working; above all, in the technical telephone staff's recognition of the fact that under the cast-iron, water-tight compartment system of Post Office tradition there is little or no scope for intelligent individual initiative and scant prospect of applying business methods to the development of what should be a rapidly expanding commercial undertaking, managed by the best technical and financial talent obtainable.

There are many experts qualified to speak with authority on this question who share the views expressed by Lord Desborough, as president of the London Chamber of Commerce, on May 18, 1911. He said:

Many chambers of commerce besides the London Chamber had discussed the subject, and they were unanimously of opinion that it would be very much better for the telephone service of this country to be in

the hands of a board of experts than to hand it over to a government department. . . . Business men would like to see an independent authority formed, somewhat on the lines of the Port of London Authority, or in any case formed of business men and of experts, with sufficient Government representation. Such men would be alive to the needs of the business community and accessible to representations from them, and would bring the telephone service of this country up to the requirements of the nation.

Problem of the Executive—Faults and Limitations

It is widely acknowledged that the telephone system in this country was not properly developed during the period before it became a Post Office monopoly, and is not being properly developed at the present moment.

Under the National Telephone Company the organization was hampered and progress hindered by the restrictions imposed by the Post Office—that is to say, by the Government—and by the imminence of the expiry of the company's license. Under the Post Office, as matters stand at present, even if ground has not been lost, the rapid advance that is a vital commercial necessity to the country is not being made, for the simple reason that a Government Department is, to judge from experience, unable to carry on a great profit-making commercial concern on a sound business basis. During both periods, therefore, the telephones and the public have suffered, and still are suffering, from the influence of government control.

The Post Office authorities, as the result of a series of observations which are continually being carried out without the knowledge of the operators, claim that the proportion of errors is in nearly all cases being annually reduced. But that is cold comfort to the subscriber who knows by personal experience that he cannot depend on obtaining a satisfactory service. He wants to know why defects in communication occur at all. The answer is that a certain proportion of them are unavoidable. It must happen sometimes that a number is engaged or that no reply is given. On the other hand, the fact remains that in America the exchanges, with practically the same equipment as is used in London, are able to give their subscribers a much more prompt and efficient service, as a matter of practical certainty. The shortcomings of operators in this country must not, therefore, be attributed entirely to the arduous and harassing nature of their work.

The root-fault appears to lie in the system, in the conduct of the telephone business by a government department instead of by private enterprise. The operators, to begin with, are civil servants; their position is assured. They cannot be punished for carelessness as they would be by a private company, and they are practically secure against dismissal. Many of them are also affected by discontent with regard to their salaries and chances of promotion. This is especially the case with senior operators transferred from the company to the Post Office and placed on a level with their juniors. These two factors of the situation are sufficient in themselves to account for a large number of the executive mistakes of which the public complain. It is not in human nature to work harder or with greater care than the minimum necessary to ensure permanent occupation in a well-paid post, and personal discontent must to a certain extent have a disturbing effect on the morale, and therefore the work, of the operator.

Criticism of Administrative Methods—Complaints and Suggestions

It is the duty of the Post Office authorities to run the telephone service at as low a cost as is possible with a due regard to efficiency. In practice this means that they have to study the requirements of the Treasury rather than the real interests of the public. With a private company the case is different. The directors have to satisfy their shareholders. They are out to make dividends, and they know that unless they give the public what it wants they cannot hope to make their undertaking a paying concern. The telephone service, that is to say, if it is to satisfy the needs of the country, must be run on commercial lines. Otherwise, as in the case of the telegraphs, it is practically bound to result in a huge annual loss, a state of affairs which will certainly not make for the necessary development and efficiency in operation.

One of the first essentials of the successful conduct of a business enterprise is that the staff should be not only competent, but contented. It is to be feared that from the operators upwards the state of affairs in the ranks of the Post Office telephone employees is rather the other way. Amongst the junior grades there is much dissatisfaction with regard to questions of hours, wages, increments, and allowances, especially owing to the fact

that practically all the senior operators transferred from the company are receiving less pay than some of their juniors who entered the Post Office service direct.

Stagnation in Promotion

Another grievance is the undue proportion of senior engineering posts in the telephone service which were allotted to Post Office engineers whose experience was limited to telegraph work. Lastly, on more general lines, senior officers who, prior to the transfer, had comparatively wide powers, now find the lack of authority and power to take responsibility, which is the rule of the system, extremely irksome. Every little matter has to be referred to headquarters for sanction before being dealt with, and the consequent delay tends to cause inefficiency and slackness.

That, indeed, must inevitably be the cumulative effect of these various causes of discontent. In view of the general hopelessness of the outlook for the engineering, and especially the expert and electrical staff, some 300 of the best of the younger men trained by the company left the service to take up positions elsewhere; many of them have since succeeded in obtaining managements and chief engineer's and electrician's positions with foreign and colonial telephone companies, and senior positions in the employ of big manufacturers of telephone equipment.

Post Office Methods

In taking over the telephones from the company, the Post Office dispensed entirely with the service and advice of its chief officials, the president and board of directors. In other words, doubtless from motives of economy, the Department was deprived of the assistance of the country's most experienced body of telephone experts. The service is now entirely administered by the Secretary's Department, both as regards its commercial and its engineering sides. As the Secretary's Department has also to administer the whole of the other vast undertakings of the Post Office, including the postal, telegraph, money order, savings bank, insurance, and other sections, it can only devote a limited amount of the time of its senior officers to the telephone service. All questions relative to the service, as such, and to developments for future requirements of the public, the renewal of plant, and other highly technical matters, which in America are considered

and settled by experts with life-training in telephone work, are in this country dealt with by the principal clerks of the Secretary's Department.

The system is controlled by men whose only business training has been picked up in the Post Office itself, who are necessarily ignorant of modern business methods as known to commercial concerns. Many of the labour-saving devices and methods in every-day use in all good commercial houses are not even now employed. Instead of them the Post Office affects the old-fashioned press copying-book and the snowball system of queries and replies, which grow and grow and only lead to practical action after a long period of delay, if indeed they do not pass into oblivion.

Great Britain. Parliamentary Debates, Official Report,
June 19, 1911. p. 52.

Postmaster General Herbert Samuel.

We have been closely watching the development of the telephone system in the United States—the country which was its original home, and where it has reached its highest development. For many years representatives of my Department have been visiting the United States in order to acquire information there. The head of the telephone branch of the Post Office has been to the United States, and the chief engineer has also made an exhaustive study of the telephone system there. The telephone traffic manager has only just returned. We have established a system of travelling scholarships for Post Office engineers which will enable them to go over to the United States for considerable periods in order to make a minute study of the telephone in that country.

Great Britain. Parliamentary Debates, Official Report,
June 19, 1911, p. 86.

Mr. Morton.

I am sorry to hear today that the Americans are so far in advance of us in this matter of the telephone. We pride ourselves, I suppose, on being as much advanced as other people, but it is worth while bearing in mind, now we are told that the Americans

are a long way in advance of us in their telephone service, that the service there is under a private company and that they are obliged to look after their customers better than a government department.

Daily Mail (London). January 2, 1914.

Editorial.

Why is it that government ownership and management of the telephones is practically always a failure? Why is it that for every thousand Europeans there is only one telephone, while for every thousand Americans there are fifteen? Why is it that the country which has done most to improve the telephone, both technically and commercially, and to popularise its use is the country in which its operation and development have been, and still are, exclusively the work of private enterprise? Why is it that not one of the innumerable discoveries that have transformed the telephone industry in the last thirty years has emanated from a Department of State, that European Governments have been the last to adopt them, and that the verdict which experts are obliged to pass upon them, with, perhaps, two partial exceptions, is that they have not learned their business? Why is it that there are great and famous towns in Europe at this moment where methods and machinery that were abandoned twenty years ago in America are still in use? Why is it that throughout the length and breadth of Great Britain and the Continent hardly a single efficient long-distance service is to be found? Why is it that in New York one can invariably get the number one wants, and get it at once, while in London one has often to wage a prolonged and embittering battle with a slow operator, insufficient lines, and a conversation—if any conversation ensues—that is only audible when it is interrupted?

The broad answer to all these questions is that the alertness and enterprise that are essential to telephone development cannot be expected from a government department. The characteristics of the bureaucratic mind and temperament forbid it. The organisation of a government office, with a virtually irremovable staff, forbids it. The spirit of officialdom, with its traditions of subordination, its narrow professional outlook, its unwillingness to concentrate responsibility, its insensible stifling of initiative,

forbids it. A government department cannot raise and discipline its staff to the same level of efficiency as a commercial company; it cannot act with the same freedom and directness as a private board; it cannot pursue a business object without deference to a hundred influences and considerations that have nothing to do with business; it cannot advertise with anything like the same boldness; it naturally seeks efficiency through economy instead of economy through efficiency; it has to think of politics and political reactions; its whole constitution prevents it from proving as enterprising as private initiative, as prompt to discard obsolete methods and apparatus, as quick to adopt new inventions, as skilful and aggressive in gathering in subscribers.

As we all know to our cost, we have government ownership and operation of the telephones in Great Britain. We shall never have a telephone system worthy of the name so long as the Post Office remains in undivided and despotic control. Sooner or later, that authority must be modified or delegated if our telephone system is ever to attain an even passable standard of efficiency.

Public Ownership and the Telephone in Great Britain. p. 349.

Hugo Richard Meyer.

The municipal and national statesmen know that the taking hold of an invention always is a speculation, and oftentimes is a gamble. They will not speculate with the public funds, no matter how legitimate the cause; for failure would give their political opponents too good an opportunity to ride into power. They know also that the pioneer work of upbuilding a new industry can be undertaken only by men who are in the position to act with an eye single to the business aspects of their venture; that it cannot be undertaken by men whose first business ever must be to consider the exigencies of politics.

But although the state and the municipality cannot upbuild a new industry, they have enunciated and enforced the doctrine that when an industry is "ripe," it must be made to fall into "the public's lap." They have established the doctrine that the public may take the "ready made" industry at the cost of the replacement of the plant, and with no allowance to the industrial pioneer for past losses or the prospects of future profits. Reduced to simple terms, this doctrine is, that the industrial pioneer renders society no service for which society ought to pay him. In its

effect, it is one of the greatest blows at industrial progress that ever any public authority has struck in Great Britain. For the doctrine destroys private initiative, which public initiative cannot replace.

New York Telephone Company.

Good Service to the Public Is Best Secured by Government Regulation, not by Political Management.

Telephone Employees in England Say the Government is not a Good Employer

Telephone workers taken over by the British Government when it purchased the National Telephone Company met recently at Manchester, England, to protest against their experiences as government employees. They declared that the Government has broken its promises to them, has underpaid them and has made promotions on the ground of favoritism and not service.

The *Manchester Chronicle* (Eng.) says:

The "ideal employer" is in many cases demanding lower wages and longer hours than the old company found necessary to successfully work the system.

When the company's employees were taken over, promotion was promised on the basis of work done, but despite the fact they had had in their hands an overwhelming proportion of the telephone exchanges and lines throughout the country, very few of the superior positions have been given to them. Out of 357 appointments in the engineering department alone, all but 44 have been given to men previously employed by the Post Office. Here, again, we have an example of broken promises and favoritism unworthy of this "model employer."

The hardship in this case is increased by the fact that the company's employees had no say in the matter of transfer and the majority would have been delighted if the state had not annexed them. Neither are the public any better pleased with the change, and the net result of the transfer has been *another proof of the unsatisfactory character of the much-vaunted state service.*

Government Ownership and Operation of Telephones in the Province of Manitoba, Canada. pp. 3-9.

The Policy of Government Ownership of Telephones Presented to the People.

Hon. R. P. Roblin, Premier of Manitoba, speaking at Norwood, November 23d, 1905, said:

The Government is now prepared to recommend to the legislature,

the establishment of a telephone system in the Province of Manitoba, to be owned and controlled by the municipalities and the Government jointly, as may be found most advantageous to both.

The price of telephones should be made so low that laboring men and artisans can have the benefit, convenience and advantage of the telephone as well as the merchant, the professional man and the gentleman of wealth and leisure, and it is our intention to recommend to Parliament a proposition of this kind with a view of giving a telephone system to all classes at cost.

At the ensuing session of the Provincial Legislature a Special Committee was appointed to investigate the proposition for Government Telephone System for the Province. This Committee (Hon. Colin H. Campbell, Chairman), reported that "independent telephone service could cut the Bell Telephone rates in two and still make a profit." [Journal of the Manitoba Legislature, 1906, p. 88.]

Hon. Colin H. Campbell, speaking in the Legislature, March, 1906, in support of the report of the Special Committee, as reported in the *Winnipeg Telegram*, said that "so far as the operation by the Government or the Municipality was concerned, the rates of the Bell Telephone Company *should be more than cut in two.*"

Hon. Colin H. Campbell, Attorney General, at the Convention of the Canadian Independent Telephone Association, September 5th, 1906, said, "The Government of our province will be able to accomplish a result that *will cut the cost of the telephone in two* and will give them much better service than they have heretofore enjoyed."

Hon. Colin H. Campbell, Attorney General, in an interview published in the *Winnipeg Telegram*, December 10th, 1906, said: "In the country, the reduction will be one-half the existing rates."

Hon. R. P. Roblin, Premier, as quoted in the *Winnipeg Telegram*, December 11th, 1906, said: "It is simply a matter of those who use telephones paying for them, *and also only to pay half what the Bell Telephone now charges.*"

Three or four days later, in an interview published in the *Winnipeg Telegram*, Premier Roblin said: "We will more than cut the Bell figures in two."

Premier Roblin, speaking at Neepawa, December 20th, 1906, (as reported in the *Winnipeg Telegram* of December 21st), said that one year from that time "they would be able to speak over a government-owned long distance line from Neepawa to

Winnipeg at less than half what is charged by the Bell Telephone Company at the present time."

In an official pamphlet addressed "To the Electors of Manitoba," issued in the autumn of 1906 by the Manitoba Government in support of their policy of government ownership of telephones, the following table was included in which the long distance rates, as they would be under government ownership, were set forth in contrast with the rates then existing on the Bell lines:

LONG DISTANCE CHARGES FOR THREE-MINUTE CONVERSATION

From Winnipeg to—	Miles.	Present Bell rates.	The Gov't charges will not exceed these rates.
Eli.....	31	.30	.10
High Bluff.....	48	.50	.15
Morris.....	42	.40	.15
Dominion City.....	56	.50	.20
Emerson.....	66	.50	.25
Macgregor.....	77	.50	.25
Darlingford.....	94	.60	.35
Cypress River.....	95	.60	.35
Pleasant Point.....	100	.75	.35
Hallsboro.....	111	.75	.40
Lariviere.....	113	.75	.40
Douglas.....	121	.75	.40
Eden.....	131	.75	.45
Kenney.....	141	.90	.50
Elgin.....	168	1.05	.60
Whitewater.....	192	1.20	.65

In an official pamphlet entitled "The Manitoba Government & Public Ownership of Telephones," farmers were promised service for \$12.00 per annum, instead of \$24.00 as charged by the Bell Telephone Company.

A plebiscite of the ratepayers of the Province was taken at the municipal elections, December 17th, 1906. The question was submitted to the electors of each municipality: "Shall this municipality own and operate its own telephone?" In fifty-five of the one hundred and twenty-eight municipalities in the Province the answer given by the electors was "Yes," while in sixty-eight municipalities the answer was "No."

Yet this result was assumed by the Provincial Government of Manitoba to be a mandate to acquire, either by purchase or construction, a provincial telephone system.

On January 1st, 1908, Premier Roblin, in an interview published in the Winnipeg papers, announced, "We have purchased

the Bell System in the Province of Manitoba for \$3,300,000, and have also purchased \$100,000 worth of supplies and equipment. We hope to take charge on January 15th. We shall operate the system by a Commission which will be free from all partyism. We shall issue to the Bell Company, debentures payable in forty years, at par and bearing interest at four per cent.

"We purchased the Bell system," said the Premier, "for the purpose of avoiding the necessity of having a dual telephone system in the Province, and in that way preventing the waste of several millions of dollars of capital as well as the extra cost to the telephone user. I believe, also, that it is a good commercial proposition and whatever profit there is in the operation of the telephone system from this time on will belong to the people of Manitoba rather than to a private company. I am also proud of the fact that we have been able to secure for the people of Manitoba the first complete system of government-owned telephones on the continent of North America; and am sure, from the information that has been secured, that the result, as years go by, will prove more and more beneficial to the people."

March 1st, 1908, six weeks after taking over the Bell System, the Government Commission announced, through a circular issued by the Winnipeg agent, that the rate previously charged to doctors and nurses in the City of Winnipeg was raised from \$40.00 to \$50.00 per annum for unlimited service. (See *Winnipeg Free Press*, February 21st, 1908.)

That the Government of Manitoba in considering the proposition of government ownership of telephones were misled by the man whom they employed to give them expert information and advice was publicly admitted by Hon. R. P. Roblin, Premier, who, in addressing the Legislature on February 14th, 1908, one month after the purchase of the Bell Telephone Company's plant, said: "He claimed he was a telephone expert, that he had knowledge that would prove, and which if put into effect would establish a system of telephones not only cheaper but much better in service than that of the Bell. We did not know anything about telephones and we admit it. He told a very smooth story and to listen to him you would almost be persuaded he knew what he talked about. We retained him, but as soon as it came down to actual construction and purchase and dealing in material we found the man knew nothing about it and we were compelled

to dismiss him." In the same speech the Premier admitted the Government had no reliable data as to what rates should be charged for telephone service. He said: "There is no set of figures available in so far as expenditure is concerned. Twelve months from today we shall be able to discuss it intelligently because we shall have a report."

February 26th, 1909, party line service was introduced in the schedule of rates for Winnipeg, Portage la Prairie and Brandon, individual lines being used exclusively previous to that date. There was also a reduction in the residence rates in Winnipeg of \$5.00 per annum, in medium exchanges of \$4.00 and smaller exchanges of \$3.00 per annum.—*Free Press* schedule, February 26th, 1909.

Rural line service was also reduced from \$24.00 to \$20.00 and \$30.00 to \$25.00, but it was stipulated that farmers would be required to build at their own expense from the highway to their residences, this expense having formerly been assumed by the Bell Company.—*Free Press*, April 15th, 1908.

In giving evidence before the Public Accounts Committee of the Manitoba Legislature on March 2d, 1910, Mr. F. C. Paterson, Chairman of the Telephone Commission, stated that "a \$20.00 rate for rural service was a losing one, stating that the reduction from \$24.00 to \$20.00 was made by the Government, and not by the Telephone Commissioners."

On May 1st, 1911, the Manitoba Telephone Commission announced that the "half rate" for conversations over the long-distance lines, between 6 p. m. and 6 a. m. was abolished and that the three-minute basis of charge for long-distance conversation was reduced to a two-minute basis, the following being the new schedule:

15 miles or less—10 cents for two minutes, 5 cents each additional minute.

15 to 20 miles—15 cents for two minutes, 5 cents each additional minute.

20 to 30 miles—20 cents for two minutes, 10 cents each additional minute.

30 to 50 miles—25 cents for two minutes, 10 cents each additional minute.

50 to 70 miles—30 cents for two minutes, 15 cents each additional minute.

70 to 100 miles—40 cents for two minutes, 20 cents each additional minute.

100 to 130 miles—50 cents for two minutes, 20 cents each additional minute.

130 to 160 miles—60 cents for two minutes, 30 cents each additional minute.

160 to 190 miles—70 cents for two minutes, 35 cents each additional minute.

In a partial analysis of these rates, the *Manitoba Free Press* of April 13th, 1910, said:

"From an off-hand inspection of the rates, it is apparent that it will work out to very considerable increases all around."

After making comparisons between present and proposed long distance rates to several points, the *Free Press* says:

"Taking into consideration these facts, together with the reductions of the limit for conversation, and the doubling, in some cases almost the trebling, of the night rates, it is quite apparent that the cost of long distance telephoning will be just about doubled in the community."

In the following table the schedule presented by the Government when the proposition for government ownership was before the electors, the Bell long distance rates, and the proposed government rates are compared:

Winnipeg to—	Miles	Bell Rates 3 minutes	Gov't Rates Promised 3 minutes	Gov't Revised Schedule Now in Effect Computed 3 minutes
Eli	31	.30	.10	.35
Morris	42	.40	.15	.35
High Bluff	48	.50	.15	.35
Dominion City ..	56	.50	.20	.45
Emerson	66	.50	.25	.45
Macgregor	77	.50	.25	.60
Darlingford	94	.60	.35	.60
Cypress	95	.60	.35	.60
Pleasant Point ..	100	.75	.35	.75
Hallsboro	111	.75	.40	.75
Lariviere	113	.75	.40	.75
Douglas	121	.75	.40	.75
Eden	131	.75	.75	.90
Kenney	141	.90	.50	.90
Elgin	168	1.05	.60	1.05
Whitewater	192	1.20	.65	not quoted

In a public interview given by the Chairman of the Telephone Commission to the *Winnipeg Tribune*, November 4th, 1911, he said: "The loss to the Government under the present system has been nearly \$150,000 in the past year." "Further no provision

has been made for depreciation." "This loss in value in spite of repairs should be placed at eight per cent."—*Winnipeg Tribune*, November 4th, 1911.

Australia. Report of the Royal Commission on Postal Service, September 30, 1910.

Accepting the most liberal reading . . . the estimated loss on the transaction of the Department from the inception of the Commonwealth to 30th June, 1909, amounted to at least £2,300,000.

The information furnished would make it appear certain that the postal section of the Department returns a profit as a whole but the extent of such profit was not ascertainable.

Your Commissioners therefore conclude that the Department's unsound financial position is due to the fact that telegraphic and telephonic services are rendered at rates which do not return revenue sufficient to cover all charges against capital account, and working expenses.

Consequently the postal section of the Department has to assist in carrying the financial burden of the telegraph and telephone sections. This is distinctly inequitable, and the result is that the mail facilities to outlying districts suffer curtailment, while telegraphic and telephonic facilities are furnished at a loss.

Your Commissioners endeavored to obtain the above mentioned information with the object of definitely establishing which were paying and which were non-paying branches of the Department, and of showing the relative extent to which they were paying or non-paying. The Accountant in New South Wales estimated the cost of earning £1 of revenue to be as follows:

Postal service	£0	14	10
Telegraph service	1	9	6
Telephone service	1	5	0

The only other information on this subject was supplied by the South Australian representative of the Commonwealth Auditor-General, who had for many years been associated with the Account Branch in New South Wales. This witness's estimate of the cost of obtaining £1 of revenue in South Australia was as follows:

Postal service	£0	15	10
Telegraph service	1	1	5
Telephone service	1	3	2

In addition to the figures quoted, the Chief Electrical Engineer stated that to obtain £1 of revenue from the telephone service involved an expenditure of £1 7s., exclusive of sinking fund.

Ecuador. Official Report of the Minister of Public Instruction, Post and Telegraphs, 1911-12. p. 26. (Translation.)

To be perfectly candid, I can do no less than state in this report, that the accounting of the telegraph branch still suffers from "routine-ism" and really woeful inefficiency. And without proper accounting, it is difficult to exercise any control, or to make just criticism. The result is, that in a service whose income should suffice to meet its needs and to yield an assured profit to the exchequer, there occurs, year after year, a greater and greater deficit, as can be proved by simply making a comparative analysis of figures and dates.

Limiting myself to the year with which this report is concerned, the financial standing of the telegraphs for the last six months of 1911 was, approximately, as follows:

Receipts	S1. 169,586,62	(\$ 82,588.68)
Expenditures	S1. 230,486,17	(\$112,246.76)
Deficit	S1. 60,899,55	(\$ 29,658.08)

In the first six months of this year the revenue and expenditures were as follows:

Receipts	S1. 139,804,63	(\$ 68,084.85)
Expenditures	S1. 221,650,28	(\$107,943.68)
Deficit	S1. 81,845,65	(\$ 39,858.83)

Spain. Telegraph Statistics for 1911, Published in Le Journal Telegraphique (Berne, Switzerland), May 25, 1913.

Total receipts	Fr. 10,622,159	(\$2,124,432)
Total expenses	Fr. 12,153,718	(\$2,430,743)
Deficit	Fr. 1,531,559	(\$ 306,311)

Switzerland. Message of the Swiss Federal Council to the Federal Assembly, December 20, 1909. (Translation.)

It has been shown that the average receipt from a domestic telegram (65.7 centimes) is considerably below the cost price, which, for all kinds of telegrams, may be placed at 74.5 centimes, and this proportion grows worse, if we make a direct comparison

of the average revenue, with the cost price of a domestic telegram only, which is at least 80 centimes. It is, therefore, out of the question to listen to requests for a reduction of the rate for a domestic telegram, unless we desire to increase the existing loss.

Some Facts in Regard to Municipal Ownership. p. 5.

Compiled by Citizens and Taxpayers Information League.

The experience of France with government ownership has been so notoriously unfortunate that even the French Government has been forced to admit its incompetence in handling its various enterprises. In the report of the Committee of Finance appointed by the Senate to examine the Postal and Telegraph Budget for the year 1910, we find the following frank acknowledgment:

The failure to conduct the postal telegraph and telephone service of France upon commercial principles is the real cause of the inefficiency and backwardness of the department. The absence of commercial principles is especially emphasized in the preparation of the annual budgets, and the situation cannot improve unless the Administration resolutely breaks away from these antiquated methods.

For many years the operating plant, especially the telephone apparatus, has not kept pace with the progress of the art, and local service has been neglected. It is also true that as soon as the Administration . . . was in a position to obtain large appropriations from Parliament, the money was spent recklessly, the department being then as lavish in expenditure as it had been penurious in former years.

A careful study of the present budget, and of many preceding ones, proves that the inefficiency of the service is not due to isolated faults, but to the continued use of bad methods which must be eradicated. Only too frequently loosely prepared budgets are placed before Parliament; the information furnished the inquirer is characterized by its sibylline brevity; certain questions remain unanswered; various statements are found to be inaccurate and seem to impute to Parliament a large amount of implicit trust. Properly speaking, the Administration has no program of work, but only a program of public credits, a fact which was recognized by Messrs. Sembat and Steeg. *The main object of the Administration in the preparation of the Budget seems to be to get the largest possible appropriations, without knowledge for what purpose these funds shall ultimately be used, and without any plan of accounting. Indeed the Administration has gone so far as to demand credits twice for the same object!*

Passing from France to Italy, we find the same story. In a pamphlet printed in 1910 by the Italian Postal Telegraph Clerks' Association, of which the Honorable Fillippo Turati,

member of the Italian Parliament, is President, the Italian Government Service is characterized as follows:

The service will continue on its road to ruin, and the country will endure the losses and the jests. The Ministry of the Post and Telegraph will then perhaps decide to send its telegraphic functionaries to Canada and Venezuela in order that they may learn there the great progress of the science.

Even the foreign press has occupied itself with this problem, laughing at us merrily.

New York Telephone Company.

Some Facts Regarding Government Ownership of Telephones. p. 56.

Some Examples of European Long Distance Service

The kind of long distance service generally furnished by European countries would never be tolerated by Americans.

The average time to get a connection between London and Paris is one hour.

The average time to get a connection between Dusseldorf and Berlin (400 miles) is 1½ hours.

The Chamber of Commerce of Alais (France) complains that it is impossible to obtain telephone connection with Marseilles (85 miles) and Lyons (115 miles) even after waiting four hours.

If the city of Chambery wants to reach Paris, the connection is made the day after the call has been filed.

A Parisian wishing to make an important toll call to Saint-Malo recently, rose early in the morning to get a good position on the "appointment list." The operator told him he would have to wait 13 hours and 10 minutes to be put through—about the same time it takes to make the journey to Saint-Malo and back on the railroad.

Aviator Gilbert, last September, flew 100 miles from Paris to Rheims in 55 minutes. He arrived at his destination before the news of his departure could be telephoned.

France. Official Report on the Budget for Posts and Telegraphs, 1908, pp. 11-13.

Joseph Noulens.

Despite the diversity of its operations, the Postal, Telegraph and Telephone Administration has not known how, or has not

desired, to apply the principle of specialization of work, of which modern industry has given examples and demonstrated the advantages.

The officials of the Rue de Grenelle, who are so wise in giving instructions to the operating departments, are very stupid in their own methods.

The administration starts with the principle that any employee within the service is able, at any time, to fill any position in the three services, postal, telephone and telegraph, which it operates.

This employee, whose ingenuity, if not his knowledge, must be so varied, has received, as we have said before, no previous training for this work. He will become proficient at the expense of the public. We need not be astonished, therefore, that our letters do not reach their destination until after several days' journey, that our telegrams are distorted and incomprehensible, that our telephone connections are made at random.

The most justifiable complaints, which would entail serious consequences for any other than a state enterprise, receive no other attention than an answer in stereotyped form: the error is due to a mistake in the service, and has been punished by a disciplinary measure. The really imprudent mistake consists in employing a staff which is not prepared for its task and of which, in the course of time, only a small portion will be capable of meeting the varied needs of the services.

This method of procedure certainly makes the task of the central administration extremely easy; the first name on the list is selected for the first vacancy to be filled; the public, the employee and his colleagues must make the best they can of it. The vacancy is filled, the duty of the central administration is done.

A clerk who has sorted letters in an office for ten years is appointed head clerk in the telegraph or telephone service; he will be intrusted with the direction of services which, up to then, had been totally strange to him; his duty will consist in supervising a staff of operators though he is ignorant of the manipulation of the modern instruments, and sometimes of all the instruments.

We find the same errors committed in every branch of the administration. Upon returning from his military service, a

young letter carrier, who delivered pneumatics (special delivery letters, sent through pneumatic tubes) with the speed to which we are accustomed, is appointed to repair wires on roofs. In his new position his inexperience exposes him to the risk of a fatal fall, unless he waits for a workman to come and do his work for him; in that case the only victim is the subscriber, who is used to patient waiting.

A clerk who has been occupied for fifteen years in directing deliveries of mails or in marking postal savings-bank pass books is promoted to the position of inspector of the technical service, and in this capacity is charged with constructing lines, performing electrical work, etc., all things which he has never heard of before, things he will neglect or do badly. He will prefer to confine himself to clerical work which will be as nearly as possible like the work he was in the habit of doing.

Westerly (R. I.) Sun, November 18, 1906. (Quoted in Municipal Ownership, February 8, 1907. New York.)

New Zealand Has Few Telephones.

*Has Been Called the Industrial Paradise of the World—
Telephone System Does not Denote That*

The commonwealth of New Zealand has sometimes been proclaimed as an industrial paradise, a socialistic state in which all the problems that have arisen to vex humanity in the evolution of the race are being settled. A practically homogeneous population, newly settled in an astonishingly fertile group of islands, has prospered as Anglo-Saxons are apt to prosper in such circumstances; hence a disposition among many writers to attribute the success of the colony to its forms of social organization.

In one important respect, however—and those most familiar with the local situation assert that there are many other respects—this Utopia of the South Seas is still far behind the times. The telephone utility, which is doing so much to unify the entire continent of North America, is in a very backward state in the government ridden British colony off the Australian coast. In the entire archipelago of New Zealand, with a population in excess of 800,000, the actual number of telephone stations of all

kinds was, on March 31, 1905, the latest date for which figures are available, but 13,423, as against 12,105 twelve months before that. In other words, this dominion with an area of 104,471 square miles and a population equal to that of the combined states of New Mexico, Delaware, Idaho, Arizona, Wyoming and Nevada, has fewer telephones than are to be found in the city of Seattle which has about one tenth the population. New York City alone, with about five times as many people as the socialistic commonwealth, has about twenty times as many telephones. The old-fashioned grounded circuits are used everywhere in New Zealand except at the few principal exchanges in Auckland, Wellington, Christchurch and Dunedin.

The telephone in New Zealand is, in fact, still a local utility. The districts are carefully defined, though they may overlap, and after regular hours speech is permitted from an office in one district to an office in another, where practicable! Most of the arrangements for handling the traffic appear to the American as equally primitive. No such conception as engineers trained in the Bell companies of the United States have of a universal convenience making it possible for everybody to communicate with everybody else, however distant, has ever arisen in the republic at the antipodes. Yet there are great distances which might be telephonically traversed and which undoubtedly would be so traversed under American management. Thus from Auckland to Wellington, the two most important centers, it is nearly 500 miles. Yet you cannot telephone between these two cities.

Much red tape is involved in subscribing to the governmental telephone service. A formal application has to be made and an entrance fee of one pound is exacted before an application will be considered. The intending subscriber may not live more than three miles from an exchange. The rates, considering the number of persons with whom communication is possible,—and obviously the value of a telephone increases with the number of subscribers who can be reached by it,—are by no means low as compared with those of the Bell system in the United States. Thus business establishments pay \$34.09, private residences \$24.35, rates which, considering the differences in the general scale of living between the two countries, are fully equal to those charged in the smaller communities of this country, where the subscriber gets for his money direct communication with as many or more

people than he would in a New Zealand city. The exchanges, furthermore, are not open at all hours of the day except in the largest places. In districts where there are less than 65 subscribers the hours of telephoning are from 9 a. m. to 5 p. m.; over 65 and up to 100, 8 a. m. to 8 p. m.; 100 to 125, 8 a. m. to 10 p. m.; 125 to 150, 8 a. m. to midnight; over 150, open continuously if desired by subscribers.

New Zealand. Postmaster General's Report (summarized financial statements).

The net results shown below, it will be noted, are exclusive of interest charges, which, if taken into account, would materially increase the deficits shown.

Year ended March 31.	Gross telegraph and telephone toll rev. (includ. miscel- laneous rev.)	Value of Govern- ment mes- sages.	Total value of telegraph and telephone toll business.	Total telegraph and telephone toll ex- penditure (excl. in- terest charges.)	Official net profit (excluding interest charges) of the combined telegraph and telephone toll ser- vices.	
					£	\$
1908	227,398	4,499	231,87	275,757	— 43,860	— 213,160
1909	238,104	4,821	242,925	307,166	— 64,241	— 312,211
1910	250,212	4,851	255,063	322,485	— 67,422	— 327,671
1911	272,943	4,874	277,817	344,046	— 66,229	— 321,873
1912	295,334	4,832	300,166	364,613	— 64,447	— 313,212
Totals	1,283,991	23,877	1,307,868	1,614,067	— 306,199	— 1,488,127

Union of South Africa. Report of the Postmaster General, 1910.

Although every effort has been made to reduce expenditure, there is little prospect of the Telegraph Department paying its way. The Reports of all the Provinces prior to Union showed losses in working, the amount in the Cape Colony and Transvaal being at the rate of £37,000 and £34,052 per annum, respectively.

The general position of the Telephone Account of the Union for the calendar year 1910, was:—

Capital Expenditure	£ 893,239
Revenue, 1910	167,271
Expenditure, 1910, including interest and depreciation....	189,049
Deficit	21,778

Union of South Africa. Report of the Postmaster General,
1911. p. 12.

After debiting the telegraph account with all direct charges incurred and a proportionate share of the cost of administration and other general expenditure, and, on the credit side, including the value of work undertaken free of charge for other government departments and of the concession represented by the reduced rates to the railway, it is found that the working of the Telegraphs of the Union resulted in a deficit for the year of over £60,000.

Union of South Africa. Telegraph Statistics for 1911 reprinted in Le Journal Telegraphique (Berne, Switzerland), May 25, 1913.

Total receipts	Fr. 8,271,900	(\$1,654,380)
Total expenses	Fr. 9,530,588	(\$1,906,118)
Deficit	Fr. 1,258,688	(\$ 251,738)

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